Annex 3F. Nitrous Oxide from Soil Management (IPCC 3C4 & 3C5) to the Technical Support Document for California's 2000-2014 Greenhouse Gas Emission Inventory

Back to main document: www.arb.ca.gov/cc/inventory/doc/methods 00-14/ghg inventory 00-14 technical support document.pdf

Variables Used in the Emissions Estimation Equations

Values last updated on Wednesday, March 30, 2016

IPCC category = 3C4 — Aggregate Sources and Non-CO2 Emissions Sources on Land - Direct N2O Emissions from Managed Soils

Activity = Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers

- Variable Name -	- Year -	- Value and Units -	- Reference -
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2000	88,910 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2001	90,249 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2002	91,362 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2003	92,540 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2004	93,491 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2005	94,100 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2006	94,783 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2007	95,583 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2008	96,377 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2009	96,955 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2010	97,632 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2011	98,588 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2012	99,532 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2013	100,496 ton	Compilation, see text
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2014	101,466 ton	Compilation, see text
Nitrogen emitted as N2O	2000	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g	IPCC, 2006e
ivity = Drained histosols			
- Variable Name -	- Year -	- Value and Units -	- Reference -
Drained histosols	2000	39,800 ha	Compilation, see text
Drained histosols	2001	39,800 ha	Compilation, see text

Desired historoids 2002 38,000 ha Compilation, see text	Variables Used in the Emissions Estimation	on Equations	Values last updated	on Wednesday, March 30,	2016
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Drained histosols	Drained histosols	2003	39,800 ha	Compilation, see text	
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Drained historosis 2007 38 800 ha Complation, see text	Drained histosols	2005	39,800 ha	Compilation, see text	
Drained histonoles 2008 38,800 ha Compilation, see text	Drained histosols	2006	39,800 ha	Compilation, see text	
Drained histosols	Drained histosols	2007	39,800 ha	Compilation, see text	
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Drained histosols 2014 39,800 ha Compilation, see text	Drained histosols	2011	39,800 ha	Compilation, see text	
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Nitrogen emitted as N2O 2009 0.01 g / g IPCC, 2006e	-				
	-				
	Tallogon onlined as 1420	2003	0.01 g / g		

Nitrogen emitted as N2O	2010	0.04 ~ / ~	IPCC 2006e
Nitrogen emitted as N2O	2010		IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g	IPCC, 2006e
Activity = Nitrogen applied in fertilizer - Synthetic			
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen applied in fertilizer - Synthetic fertilizers	2000	550,485 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2001	542,705 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2002	550,216 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2003	537,947 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2004	542,299 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2005	532,743 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2006	520,087 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2007	536,113 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2008	538,479 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2009	513,379 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2010	538,345 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2011	569,673 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2012	563,750 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2013	539,403 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2014	501,644 ton	Compilation, see text
Nitrogen emitted as N2O	2000	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g	IPCC, 2006e
Activity = Nitrogen in crop residues			
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in crop residues	2000	75.76 Gg (thousand tonnes)	Compilation, see text
Nitrogen in crop residues	2001	76.16 Gg (thousand tonnes)	Compilation, see text
Nitrogen in crop residues	2002	82.37 Gg (thousand tonnes)	Compilation, see text
Nitrogen in crop residues	2003	80.61 Gg (thousand tonnes)	Compilation, see text
Nitrogen in crop residues	2004	96.28 Gg (thousand tonnes)	Compilation, see text
Nitrogen in crop residues	2005	77.19 Gg (thousand tonnes)	Compilation, see text
Nitrogen in crop residues	2006	75.53 Gg (thousand tonnes)	Compilation, see text
Nitrogen in crop residues	2007	82.04 Gg (thousand tonnes)	Compilation, see text
Nitrogen in crop residues	2008	90.83 Gg (thousand tonnes)	Compilation, see text
Nitrogen in crop residues	2009	85 Gg (thousand tonnes)	Compilation, see text
Nitrogen in crop residues	2010	83.3 Gg (thousand tonnes)	Compilation, see text
Nitrogen in crop residues	2010	85.94 Gg (thousand tonnes)	Compilation, see text
Nitrogen in crop residues	2011	85.34 Gg (thousand tonnes)	Compilation, see text
-		- · · · · · · · · · · · · · · · · · · ·	•
Nitrogen in crop residues Nitrogen in crop residues	2013 2014	80.08 Gg (thousand tonnes) 64.27 Gg (thousand tonnes)	Compilation, see text Compilation, see text

ables Used in the Emissions Estimatio	n Equations	values last updated	on Wednesday, March 30, 2016
Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g/g	IPCC, 2006e
Activity = Nitrogen in managed manure - Beef	cattle		
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in managed manure - Beef cattle	2000	14.83 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2001	15.04 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2002	16.78 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2003	18.48 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2004	17.46 Gg (thousand tonnes)	Compilation, see text
	2004	,	•
Nitrogen in managed manure - Beef cattle		18.35 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2006	19.75 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2007	19.33 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2008	19.02 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2009	17.96 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2010	17.34 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2011	17.36 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2012	18.13 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2013	18.18 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2014	20.03 Gg (thousand tonnes)	Compilation, see text
Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g	IPCC, 2006e
		0.01 g7 g	11 00, 20000
Activity = Nitrogen in managed manure - Dairy		- Value and Units -	- Potoronoo -
- Variable Name -	- Year -	- Value and Units -	
Nitrogen in managed manure - Dairy cows	2000	135.31 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2001	136.75 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2002	147.96 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2003	150.83 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2004	146.38 Gg (thousand tonnes)	Compilation, see text

Variables	Used in the	Emissions	Estimation	Equations
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Values last updated on Wednesday, March 30, 2016

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	Nitrogen in managed manure - Dairy cows	2005	149.98 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Dairy cows	2006	154.01 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Dairy cows	2007	160.98 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Dairy cows	2008	156.13 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Dairy cows	2009	152.33 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Dairy cows	2010	156.48 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Dairy cows	2011	155.95 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Dairy cows	2012	156.61 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Dairy cows	2013	151.79 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Dairy cows	2014	155.03 Gg (thousand tonnes)	Compilation, see text
	Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
	Nitrogen emitted as N2O	2001	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2002	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2003	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2004	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2005	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2006	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2007	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2008	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2009	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2010	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2011	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2012	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2013	0.01 g/g	IPCC, 2006e
	Nitrogen emitted as N2O	2014	0.01 g / g	IPCC, 2006e

Activity = Nitrogen in managed manure - Dairy heifers

- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in managed manure - Dairy heifers	2000	38.66 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2001	40.1 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2002	41.35 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2003	42.06 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2004	37.72 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2005	39.49 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2006	40.67 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2007	40.38 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2008	39.28 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2009	38.58 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2010	37.37 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2011	37.41 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2012	41.1 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2013	38.26 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2014	36.9 Gg (thousand tonnes)	Compilation, see text
Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g/g	IPCC, 2006e

Nitrogen emitted as N2O	2013	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2014		IPCC, 2006e
activity = Nitrogen in managed manure - Poultry			·
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in managed manure - Poultry	2000	21.2 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2000	21.18 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2002	20.62 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2002	19.51 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2004	17.85 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2005	17.05 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2006	17.67 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2007	18.08 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2008	17.33 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2009	16.83 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2010	17.03 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2011	16.29 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2012	16.07 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2013	14.07 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	2014	12.26 Gg (thousand tonnes)	Compilation, see text
Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	• •	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g	
Nitrogen emitted as N2O	2003	• •	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g / g	
Nitrogen emitted as N2O	2005	0.01 g / g	
Nitrogen emitted as N2O	2006	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g / g	
Nitrogen emitted as N2O	2009	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g	IPCC, 2006e
ctivity = Nitrogen in managed manure - Sheep, g	oat, horse		
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in managed manure - Sheep, goat, horse	2000	3.03 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2001	3.31 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2002	3.3 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2003	3.46 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2004	3.54 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2005	3.82 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2006	3.76 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2007	3.63 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2008	3.62 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2009	3.79 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2010	3.71 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2011	3.71 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2012	3.69 Gg (thousand tonnes)	Compilation, see text
	2013	3.64 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	0044	3.69 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse Nitrogen in managed manure - Sheep, goat, horse	2014	order og (mrodetarra termres)	
	2014	0.01 g / g	IPCC, 2006e
Nitrogen in managed manure - Sheep, goat, horse			

bles Used in the Emissions Estimation	ı ⊑quations	values last updated	on Wednesday, March 30, 2016
Nitrogen emitted as N2O	2003	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2009		IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2011	• •	
Nitrogen emitted as N2O	2012	0.01 g / g	
Nitrogen emitted as N2O	2013	0.01 g / g	
Nitrogen emitted as N2O	2014		IPCC, 2006e
Activity = Nitrogen in managed manure - Swine			
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in managed manure - Swine	2000	639.2 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2001	475.38 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2002	683.29 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2002	640.43 Mg (tonnes)	Compilation, see text
	2003	,	·
Nitrogen in managed manure - Swine		682.36 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2005	675.76 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2006	676.32 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2007	765.1 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2008	386.5 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2009	537.25 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2010	507.69 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2011	536.09 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2012	527.59 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2013	487.04 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2014	540.51 Mg (tonnes)	Compilation, see text
Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g	IPCC, 2006e
Activity = Nitrogen in unmanaged manure - Bee	ef cattle		
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in unmanaged manure - Beef cattle	2000	106.34 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2001	105.36 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2002	104.73 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2003	103.51 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2004	103.3 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2005	106.31 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2006	102.96 Gg (thousand tonnes)	Compilation, see text
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Variables Used in the Emissions Estimation I	Equations	Values last updated on Wednesday, March 30, 2016
Nitrogen in unmanaged manure - Beef cattle	2008	85.21 Gg (thousand tonnes) Compilation, see text

Nitrogen in unmanaged manure - Beef cattle	2008	85.21 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2009	85.08 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2010	84.08 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2011	81.65 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2012	83.11 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2013	81.91 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2014	81.92 Gg (thousand tonnes)	Compilation, see text
Nitrogen emitted as N2O	2000	0.02 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.02 g / g	IPCC, 2006e

Activity = Nitrogen in unmanaged manure - Dairy cows

- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in unmanaged manure - Dairy cows	2000	26.89 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2001	26.95 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2002	28.93 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2003	29.22 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2004	28.09 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2005	28.52 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2006	28.9 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2007	29.96 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2008	29.05 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2009	28.3 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2010	29.07 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2011	28.98 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2012	29.1 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2013	28.2 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	2014	28.8 Gg (thousand tonnes)	Compilation, see text
Nitrogen emitted as N2O	2000	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.02 g / g	IPCC, 2006e

lables Used in the Emissions Estimation	Equations	Values last updated	on Wednesday, March 30, 2016
Activity = Nitrogen in unmanaged manure - Dair	y heifers		
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in unmanaged manure - Dairy heifers	2000	5.87 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2001	6.03 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2002	6.16 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2003	6.27 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2004	5.62 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2005	5.89 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2006	6.06 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2007	6.02 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2008	5.86 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2009	5.75 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2010	5.57 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2011	5.58 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2012	6.13 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2013	5.7 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy heifers	2014	5.5 Gg (thousand tonnes)	Compilation, see text
Nitrogen emitted as N2O	2000	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.02 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.02 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.02 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.02 g / g	
Nitrogen emitted as N2O	2013	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.02 g / g	IPCC, 2006e
Activity = Nitrogen in unmanaged manure - Pou	ltry		
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in unmanaged manure - Poultry	2000	164.66 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2001	166.92 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2002	162.37 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2003	155.54 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2004	141.66 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2005	129.77 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2006	140.22 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2007	134.36 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2008	127.78 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2009	123.73 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2010	125.38 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2011	111.77 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2012	111.85 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2013	98.8 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2014	88.27 Mg (tonnes)	Compilation, see text
Nitrogen emitted as N2O	2000	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.02 g / g	IPCC, 2006e

oles Used in the Emissions Estimation E	quations	values last updated	on Wednesday, March 30, 20
Nitrogen emitted as N2O	2006	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.02 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.02 g / g	IPCC, 2006e
activity = Nitrogen in unmanaged manure - Sheep,	, goat, horse		
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in unmanaged manure - Sheep, goat, horse	2000	24.47 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2001	24.76 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2002	25.77 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2003	28.43 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2004	30.73 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2005	34.03 Gg (thousand tonnes)	Compilation, see text
		,	
Nitrogen in unmanaged manure - Sheep, goat, horse	2006	34.11 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2007	33.29 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2008	32.82 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2009	33.99 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2010	34.18 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2011	34.54 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2012	34.48 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2013	34.34 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, horse	2014	34.52 Gg (thousand tonnes)	Compilation, see text
Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g	IPCC, 2006e
G		• •	
Nitrogen emitted as N2O	2010	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g/g	IPCC, 2006e
ctivity = Nitrogen in unmanaged manure - Swine			
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in unmanaged manure - Swine	2000	163.57 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2001	130.47 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2002	200.42 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2003	177.77 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2004	178.8 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2005	166.67 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2006	156.52 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2007	165.55 Mg (tonnes)	Compilation, see text
Thireger in annianaged manare Chine		- · · /	
Nitrogen in unmanaged manure - Swine	2008	83.63 Mg (tonnes)	Compilation, see text
	2008 2009	83.63 Mg (tonnes) 116.25 Mg (tonnes)	Compilation, see text Compilation, see text

Values last updated on Wednesday, March 30, 2016

Nitrogen in unmanaged manure - Swine	2011	116 Mg (tonnes) Compilation, see text
Nitrogen in unmanaged manure - Swine	2012	114.16 Mg (tonnes) Compilation, see text
Nitrogen in unmanaged manure - Swine	2013	105.38 Mg (tonnes) Compilation, see text
Nitrogen in unmanaged manure - Swine	2014	116.95 Mg (tonnes) Compilation, see text
Nitrogen emitted as N2O	2000	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2001	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2002	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2003	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2004	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2005	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2006	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2007	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2008	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2009	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2010	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2011	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2012	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2013	0.02 g / g IPCC, 2006e
Nitrogen emitted as N2O	2014	0.02 g / g IPCC, 2006e

Activity = Residential use of nitrogen fertilizer on turf - Synthetic fertilizers

- Variable Name -	- Year -	- Value and Units -	- Reference -
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2000	131,015 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2001	132,988 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2002	134,628 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2003	136,364 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2004	137,766 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2005	138,663 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2006	139,670 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2007	140,848 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2008	142,018 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2009	142,870 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2010	143,867 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2011	145,277 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2012	146,667 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2013	148,088 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2014	149,518 ton	Compilation, see text
Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g/g	IPCC, 2006e

Variables Used in the Emissions Estimation Equations	Values last updated on Wednesday, March 30, 2016
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Nitrogen emitted as N2O	2009	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g/g IPCC, 2006e

IPCC category = 3C5 — Aggregate Sources and Non-CO2 Emissions Sources on Land - Indirect N2O Emissions from Managed Soils

Activity = Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers

- Variable Name -	- Year -	- Value and Units -	- Reference -	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	1990	78,000 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	1991	79,648 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	1992	81,030 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	1993	81,885 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	1994	82,433 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	1995	82,925 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	1996	83,581 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	1997	84,862 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	1998	85,935 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	1999	87,388 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2000	88,910 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2001	90,249 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2002	91,362 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2003	92,540 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2004	93,491 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2005	94,100 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2006	94,783 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2007	95,583 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2008	96,377 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2009	96,955 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2010	97,632 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2011	98,588 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2012	99,532 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2013	100,496 ton	Compilation, see text	
Commercial use of nitrogen fertilizer on turf - Synthetic fertilizers	2014	101,466 ton	Compilation, see text	
Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e	
Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e	
Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e	

Leached nitrogen emitted as N2O	1993 1994 1995 1996 1997 1998 1999 2000 2001 2001 2002 2003	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	1995 1996 1997 1998 1999 2000 2001 2002 2003	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	1996 1997 1998 1999 2000 2001 2002 2003	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	1997 1998 1999 2000 2001 2002 2003	7.500E-03 IPCC, 2006e 7.500E-03 IPCC, 2006e 7.500E-03 IPCC, 2006e 7.500E-03 IPCC, 2006e 7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	1998 1999 2000 2001 2002 2003	7.500E-03 IPCC, 2006e 7.500E-03 IPCC, 2006e 7.500E-03 IPCC, 2006e 7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	1999 2000 2001 2002 2003	7.500E-03 IPCC, 2006e 7.500E-03 IPCC, 2006e 7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O Leached nitrogen emitted as N2O Leached nitrogen emitted as N2O	2000 2001 2002 2003	7.500E-03 IPCC, 2006e 7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O Leached nitrogen emitted as N2O	2001 2002 2003	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2002 2003	•
	2003	7.500E-03 IFCC, 2006E
Leached filliogen emilled as N2O		7.500E.03 IDCC 20060
Leached nitrogen emitted as N2O		7.500E-03 IPCC, 2006e 7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2004	7.500E-03 IPCC, 2006e
· ·	2005	
Leached nitrogen emitted as N2O Leached nitrogen emitted as N2O	2007	7.500E-03 IPCC, 2006e 7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2007	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2009	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2010	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2011	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2012	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2013	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2014	7.500E-03 IPCC, 2006e
Leaching rate	1990	0.3 IPCC, 2006e
Leaching rate	1990	0.3 IPCC, 2006e
Leaching rate	1992	0.3 IPCC, 2006e
Leaching rate	1993	0.3 IPCC, 2006e
Leaching rate	1994	0.3 IPCC, 2006e
Leaching rate	1995	0.3 IPCC, 2006e
Leaching rate	1996	0.3 IPCC, 2006e
Leaching rate	1997	0.3 IPCC, 2006e
Leaching rate	1998	0.3 IPCC, 2006e
Leaching rate	1999	0.3 IPCC, 2006e
Leaching rate	2000	0.3 IPCC, 2006e
Leaching rate	2001	0.3 IPCC, 2006e
Leaching rate	2002	0.3 IPCC, 2006e
Leaching rate	2003	0.3 IPCC, 2006e
Leaching rate	2004	0.3 IPCC, 2006e
Leaching rate	2005	0.3 IPCC, 2006e
Leaching rate	2006	0.3 IPCC, 2006e
Leaching rate	2007	0.3 IPCC, 2006e
Leaching rate	2008	0.3 IPCC, 2006e
Leaching rate	2009	0.3 IPCC, 2006e
Leaching rate	2010	0.3 IPCC, 2006e
Leaching rate	2011	0.3 IPCC, 2006e
Leaching rate	2012	0.3 IPCC, 2006e
Leaching rate	2013	0.3 IPCC, 2006e
Leaching rate	2014	0.3 IPCC, 2006e
Nitrogen emitted as N2O	1990	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1991	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	1992	0.01 g/g IPCC, 2006e

1995

1996

1997

1998

Nitrogen emitted as N2O

Nitrogen emitted as N2O

Nitrogen emitted as N2O

Nitrogen emitted as N2O

0.01 g / g IPCC, 2006e 0.01 g / g IPCC, 2006e

0.01 g/g IPCC, 2006e

0.01 g/g IPCC, 2006e

es Used in the Emissions Estimati	•	Values last updated on Wednesday, March 30,
Nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
<u>*</u>		
Nitrogen emitted as N2O	2012	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1991	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1992	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1993	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1994	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g/g IPCC, 2006e
	2006	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O		
Redeposited nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2010	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2011	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Volatilization rate	1990	0.1 g / g IPCC, 2006e
Volatilization rate	1991	0.1 g / g IPCC, 2006e
Volatilization rate	1992	0.1 g / g IPCC, 2006e
Volatilization rate	1993	0.1 g / g IPCC, 2006e
Volatilization rate	1994	0.1 g / g IPCC, 2006e
Volatilization rate	1995	0.1 g / g IPCC, 2006e
Volatilization rate	1996	0.1 g / g IPCC, 2006e
Volatilization rate	1997	0.1 g / g IPCC, 2006e
Volatilization rate	1998	0.1 g / g IPCC, 2006e
Volatilization rate	1999	0.1 g / g IPCC, 2006e
Volatilization rate	2000	0.1 g / g IPCC, 2006e
Volatilization rate	2001	0.1 g / g IPCC, 2006e
Volatilization rate	2002	0.1 g / g IPCC, 2006e
Volatilization rate	2003	0.1 g / g IPCC, 2006e
Volatilization rate	2004	0.1 g / g IPCC, 2006e

bles Used in the Emissions Estimation	Equations	Values last updated	on Wednesday, March 30, 201
Volatilization rate	2005	0.1 g/g	IPCC, 2006e
Volatilization rate	2006	0.1 g / g	IPCC, 2006e
Volatilization rate	2007	0.1 g / g	IPCC, 2006e
Volatilization rate	2008	0.1 g / g	IPCC, 2006e
Volatilization rate	2009	0.1 g / g	IPCC, 2006e
Volatilization rate	2010	0.1 g / g	IPCC, 2006e
Volatilization rate	2011	0.1 g / g	IPCC, 2006e
Volatilization rate	2012	0.1 g/g	IPCC, 2006e
Volatilization rate	2013	0.1 g / g	IPCC, 2006e
Volatilization rate	2014	0.1 g / g	IPCC, 2006e
Activity = Nitrogen applied in fertilizer - Organic	fertilizers		
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen applied in fertilizer - Organic fertilizers	1990	3,374 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	1991	2,397 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	1992	3,477 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	1993	1,712 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	1994	4,792 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	1995	4,308 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	1996	3,590 ton	•
Nitrogen applied in fertilizer - Organic fertilizers	1997	1,522 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	1998	1,260 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	1999	1,365 ton	•
Nitrogen applied in fertilizer - Organic fertilizers	2000	9,864 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	2001	3,029 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	2002	4,760 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	2003	6,350 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	2004	2,417 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	2005	3,559 ton	CDFA, various years
	2006	,	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	2007	2,289 ton	
Nitrogen applied in fertilizer - Organic fertilizers		895 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	2008	3,248 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	2009	6,658 ton	
Nitrogen applied in fertilizer - Organic fertilizers	2010	67 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	2011	185 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	2012	5,184 ton	CDFA, various years
Nitrogen applied in fertilizer - Organic fertilizers	2013	5,184 ton	·
Nitrogen applied in fertilizer - Organic fertilizers	2014	5,184 ton	<u> </u>
Leached nitrogen emitted as N2O	1990 1991	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O		7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1993	7.500E-03	·
Leached nitrogen emitted as N2O	1994	7.500E-03	•
Leached nitrogen emitted as N2O	1995	7.500E-03	·
Leached nitrogen emitted as N2O	1996	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1997	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1998	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1999	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2000	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2001	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2002	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2003	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2004	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2005	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2006	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2007	7.500E-03	IPCC, 2006e

es Used in the Emissions Estima	•	Values last updated	
Leached nitrogen emitted as N2O	2008		IPCC, 2006e
Leached nitrogen emitted as N2O	2009	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2010	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2011	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2012	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2014	7.500E-03	IPCC, 2006e
Leaching rate	1990	0.3	IPCC, 2006e
Leaching rate	1991	0.3	IPCC, 2006e
Leaching rate	1991		IPCC, 2006e
		0.3	·
Leaching rate	1993	0.3	IPCC, 2006e
Leaching rate	1994	0.3	IPCC, 2006e
Leaching rate	1995	0.3	IPCC, 2006e
Leaching rate	1996	0.3	IPCC, 2006e
Leaching rate	1997	0.3	IPCC, 2006e
Leaching rate	1998	0.3	IPCC, 2006e
Leaching rate	1999	0.3	IPCC, 2006e
Leaching rate	2000	0.3	IPCC, 2006e
Leaching rate	2001	0.3	IPCC, 2006e
Leaching rate	2002	0.3	IPCC, 2006e
Leaching rate	2003	0.3	IPCC, 2006e
Leaching rate	2004	0.3	IPCC, 2006e
Leaching rate	2005	0.3	IPCC, 2006e
Leaching rate	2006	0.3	IPCC, 2006e
_eaching rate	2007	0.3	IPCC, 2006e
•			
Leaching rate	2008	0.3	IPCC, 2006e
_eaching rate	2009	0.3	IPCC, 2006e
_eaching rate	2010	0.3	IPCC, 2006e
_eaching rate	2011	0.3	IPCC, 2006e
Leaching rate	2012	0.3	IPCC, 2006e
Leaching rate	2013	0.3	IPCC, 2006e
Leaching rate	2014	0.3	IPCC, 2006e
Nitrogen emitted as N2O	1990	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1991	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1992	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1993	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1994	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1995	• •	IPCC, 2006e
Nitrogen emitted as N2O	1996	0 0	IPCC, 2006e
Nitrogen emitted as N2O	1997		IPCC, 2006e
Nitrogen emitted as N2O	1998	0 0	IPCC, 2006e
Nitrogen emitted as N2O	1999	0 0	IPCC, 2006e
Nitrogen emitted as N2O	2000		IPCC, 2006e
•	2001	0 0	•
Nitrogen emitted as N2O		• •	IPCC, 2006e
Nitrogen emitted as N2O	2002	• •	IPCC, 2006e
Nitrogen emitted as N2O	2003		IPCC, 2006e
Nitrogen emitted as N2O	2004		IPCC, 2006e
Nitrogen emitted as N2O	2005	• •	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2011		IPCC, 2006e
Nitrogen emitted as N2O	2012		IPCC, 2006e
-	2013	0.01 g/g	

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Nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1991	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1992	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1993	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1994	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Volatilization rate	1990	0.2 g / g IPCC, 2006e
Volatilization rate	1991	0.2 g / g IPCC, 2006e
Volatilization rate	1992	0.2 g / g IPCC, 2006e
Volatilization rate	1993	0.2 g / g IPCC, 2006e
Volatilization rate	1994	0.2 g / g IPCC, 2006e
Volatilization rate	1995	0.2 g / g IPCC, 2006e
Volatilization rate	1996	0.2 g / g IPCC, 2006e
Volatilization rate	1997	0.2 g / g IPCC, 2006e
Volatilization rate	1998	0.2 g / g IPCC, 2006e
Volatilization rate	1999	0.2 g / g IPCC, 2006e
Volatilization rate	2000	0.2 g / g IPCC, 2006e
Volatilization rate	2001	0.2 g / g IPCC, 2006e
Volatilization rate	2002	0.2 g / g IPCC, 2006e
Volatilization rate	2003	0.2 g / g IPCC, 2006e
Volatilization rate	2004	0.2 g / g IPCC, 2006e
Volatilization rate	2005	0.2 g / g IPCC, 2006e
Volatilization rate	2006	0.2 g / g IPCC, 2006e
Volatilization rate	2007	0.2 g / g IPCC, 2006e
Volatilization rate	2008	0.2 g / g IPCC, 2006e
Volatilization rate	2009	0.2 g / g
Volatilization rate	2010	0.2 g / g
Volatilization rate	2011	0.2 g / g
Volatilization rate	2012	0.2 g / g
v Olatilization rate		
Volatilization rate	2013	0.2 g / g IPCC, 2006e

Activity = Nitrogen applied in fertilizer - Synthetic fertilizers

- Variable Name -	- Year -	- Value and Units Reference -	
Nitrogen applied in fertilizer - Synthetic fertilizers	1990	563,165 ton CDFA, various years	
Nitrogen applied in fertilizer - Synthetic fertilizers	1991	456,222 ton CDFA, various years	

nes used in the Emissions Estimatio	n Equations	values last updated	on wednesday, March 30, 2016
Nitrogen applied in fertilizer - Synthetic fertilizers	1992	494,606 ton	CDFA, various years
Nitrogen applied in fertilizer - Synthetic fertilizers	1993	587,279 ton	CDFA, various years
Nitrogen applied in fertilizer - Synthetic fertilizers	1994	511,587 ton	CDFA, various years
Nitrogen applied in fertilizer - Synthetic fertilizers	1995	669,513 ton	CDFA, various years
Nitrogen applied in fertilizer - Synthetic fertilizers	1996	634,611 ton	CDFA, various years
Nitrogen applied in fertilizer - Synthetic fertilizers	1997	509,841 ton	CDFA, various years
Nitrogen applied in fertilizer - Synthetic fertilizers	1998	542,175 ton	CDFA, various years
Nitrogen applied in fertilizer - Synthetic fertilizers	1999	547,153 ton	CDFA, various years
Nitrogen applied in fertilizer - Synthetic fertilizers	2000	550,485 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2001	542,705 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2002	550,216 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2003	537,947 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2004	542,299 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2005	532,743 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2006	520,087 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2007	536,113 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2008	538,479 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2009	513,379 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2010	538,345 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2011	569,673 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2012	563,750 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2013	539,403 ton	Compilation, see text
Nitrogen applied in fertilizer - Synthetic fertilizers	2014	501,644 ton	Compilation, see text
Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1994	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1995	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1996	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1997	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1998	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1999	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2000	7.500E-03	
Leached nitrogen emitted as N2O	2001	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2002	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2003	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2004	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2005	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2006	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2007	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2008	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2009	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2010	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2011	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2012	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2014	7.500E-03	IPCC, 2006e
Leaching rate	1990	0.3	IPCC, 2006e
Leaching rate	1991	0.3	IPCC, 2006e
Leaching rate	1992	0.3	IPCC, 2006e
Leaching rate	1993	0.3	IPCC, 2006e
Leaching rate	1994	0.3	IPCC, 2006e
Leaching rate	1995	0.3	IPCC, 2006e
Leaching rate	1996	0.3	IPCC, 2006e
Leaching rate	1997	0.3	IPCC, 2006e

bles Used in the Emissions Estin	nation Equations	Values last updated	on Wednesday, March 30, 2016
Leaching rate	1998	0.3	IPCC, 2006e
Leaching rate	1999	0.3	IPCC, 2006e
Leaching rate	2000	0.3	IPCC, 2006e
Leaching rate	2001	0.3	IPCC, 2006e
Leaching rate	2002	0.3	IPCC, 2006e
Leaching rate	2003	0.3	IPCC, 2006e
Leaching rate	2004	0.3	IPCC, 2006e
Leaching rate	2005	0.3	IPCC, 2006e
Leaching rate	2006	0.3	IPCC, 2006e
Leaching rate	2007	0.3	IPCC, 2006e
Leaching rate	2008	0.3	IPCC, 2006e
Leaching rate	2009	0.3	IPCC, 2006e
Leaching rate	2010	0.3	IPCC, 2006e
Leaching rate	2011	0.3	IPCC, 2006e
Leaching rate	2012	0.3	IPCC, 2006e
Leaching rate	2013	0.3	IPCC, 2006e
Leaching rate	2014	0.3	IPCC, 2006e
Nitrogen emitted as N2O	1990	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1991	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1992	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1993		IPCC, 2006e
Nitrogen emitted as N2O	1994	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1995	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1996	0.01 g / g	IPCC, 2006e
•	1997	• •	
Nitrogen emitted as N2O		0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1998	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1999	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2005		IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1991	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1992	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1993	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1994	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001		IPCC, 2006e
,		• •	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 q / u	IFCC, 2000e

bles Used in the Emissions Estimatior	n Equations	Values last updated	on Wednesday, March 30, 2016
Redeposited nitrogen emitted as N2O	2004	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2010	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2011	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g / g	IPCC, 2006e
Volatilization rate	1990	0.1 g / g	IPCC, 2006e
Volatilization rate	1991	0.1 g / g	IPCC, 2006e
Volatilization rate	1992	0.1 g / g	IPCC, 2006e
Volatilization rate	1993	0.1 g / g	IPCC, 2006e
Volatilization rate	1994	0.1 g/g	IPCC, 2006e
Volatilization rate	1995	0.1 g/g	IPCC, 2006e
Volatilization rate	1996	0.1 g / g	IPCC, 2006e
Volatilization rate	1997	0.1 g / g	IPCC, 2006e
Volatilization rate	1998	0.1 g / g	IPCC, 2006e
Volatilization rate	1999	0.1 g / g	IPCC, 2006e
Volatilization rate	2000	0.1 g/g	IPCC, 2006e
Volatilization rate	2001	0.1 g/g	IPCC, 2006e
Volatilization rate	2002	0.1 g / g	IPCC, 2006e
Volatilization rate	2003	0.1 g / g	IPCC, 2006e
Volatilization rate	2004	0.1 g / g	IPCC, 2006e
Volatilization rate	2005	0.1 g/g	IPCC, 2006e
Volatilization rate	2006	0.1 g/g	IPCC, 2006e
Volatilization rate	2007	• •	IPCC, 2006e
Volatilization rate	2008	0.1 g/g	
Volatilization rate	2009	0.1 g / g	IPCC, 2006e
Volatilization rate	2010	0.1 g / g	IPCC, 2006e
Volatilization rate	2011	• •	IPCC, 2006e
Volatilization rate	2012	0.1 g / g	IPCC, 2006e
Volatilization rate	2013	0.1 g/g	IPCC, 2006e
Volatilization rate	2014	0.1 g/g	IPCC, 2006e
Activity = Nitrogen in managed manure - Beef o		Value and Halfa	D-(
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in managed manure - Beef cattle	1990	16.72 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	1991	13.87 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	1992	12.9 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	1993	13 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	1994	12.38 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	1995	13.84 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	1996	11.95 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	1997	12.17 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	1998	12.71 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	1999	14.46 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2000	14.83 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2001	15.04 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2002	16.78 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2003	18.48 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Beef cattle	2004	17.46 Gg (thousand tonnes)	Compilation, see text
-			
Nitrogen in managed manure - Beef cattle	2005	18.35 Gg (thousand tonnes)	Compilation, see text

ble	es Used in the Emissions Estimation Equ	ations	Values last updated	on Wednesday, March 30, 2016
	Nitrogen in managed manure - Beef cattle	2007	19.33 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Beef cattle	2008	19.02 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Beef cattle	2009	17.96 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Beef cattle	2010	17.34 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Beef cattle	2011	17.36 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Beef cattle	2012	18.13 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Beef cattle	2013	18.18 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Beef cattle	2014	20.03 Gg (thousand tonnes)	Compilation, see text
	Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1994	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1995	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1996	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1997	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1998	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1999	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2000	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2001	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2002	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2003	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2004	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2005	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2006	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2007	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2008		IPCC, 2006e
	Leached nitrogen emitted as N2O	2009		IPCC, 2006e
	Leached nitrogen emitted as N2O	2010		IPCC, 2006e
	Leached nitrogen emitted as N2O	2011		IPCC, 2006e
	Leached nitrogen emitted as N2O	2012		IPCC, 2006e
	Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2014	7.500E-03	IPCC, 2006e
	Leaching rate	1990	0.3	IPCC, 2006e
	Leaching rate	1991	0.3	IPCC, 2006e
	Leaching rate	1992	0.3	IPCC, 2006e
	Leaching rate	1993	0.3	IPCC, 2006e
	Leaching rate	1994	0.3	IPCC, 2006e
	Leaching rate	1995	0.3	IPCC, 2006e
	Leaching rate	1996	0.3	IPCC, 2006e
	Leaching rate	1997	0.3	IPCC, 2006e
	Leaching rate	1998	0.3	IPCC, 2006e
	Leaching rate	1999	0.3	IPCC, 2006e
	Leaching rate	2000	0.3	IPCC, 2006e
	Leaching rate	2001	0.3	IPCC, 2006e
	Leaching rate	2002	0.3	IPCC, 2006e
	Leaching rate	2003	0.3	IPCC, 2006e
	Leaching rate Leaching rate	2004 2005	0.3	IPCC, 2006e IPCC, 2006e
	Leaching rate Leaching rate	2005	0.3	IPCC, 2006e
	Leaching rate Leaching rate	2006	0.3	IPCC, 2006e
	Leaching rate	2007	0.3	IPCC, 2006e
	Leaching rate	2009	0.3	IPCC, 2006e
	Leaching rate	2009	0.3	IPCC, 2006e
	Leaching rate	2010	0.3	IPCC, 2006e
	Leaching rate	2012	0.3	IPCC, 2006e
			0.5	55, 2000

Land-language	6040	0.0 1000 0000
Leaching rate	2013	0.3 IPCC, 2006e
Leaching rate	2014	0.3 IPCC, 2006e
Nitrogen emitted as N2O	1990	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	1991	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	1992	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1993	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1994	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g / g IPCC, 2006e
•	1991	
Redeposited nitrogen emitted as N2O	1991	
Redeposited nitrogen emitted as N2O	1992	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O Redeposited nitrogen emitted as N2O	1993	0.01 g / g IPCC, 2006e 0.01 g / g IPCC, 2006e
,		0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	
Redeposited nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2011	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Volatilization rate	1990	0.2 g / g IPCC, 2006e
Volatilization rate	1991	0.2 g / g IPCC, 2006e
Volatilization rate	1992	0.2 g / g IPCC, 2006e
Volatilization rate	1993	0.2 g / g IPCC, 2006e

No. 1 and the second se			1000 0000
Volatilization rate	1994		IPCC, 2006e
Volatilization rate	1995	0.2 g / g	IPCC, 2006e
Volatilization rate	1996	0.2 g / g	IPCC, 2006e
Volatilization rate	1997	0.2 g / g	IPCC, 2006e
Volatilization rate	1998	0.2 g / g	IPCC, 2006e
Volatilization rate	1999	0.2 g / g	IPCC, 2006e
Volatilization rate	2000	0.2 g / g	IPCC, 2006e
Volatilization rate	2001 2002	0.2 g / g	·
Volatilization rate Volatilization rate	2002	0.2 g / g 0.2 g / g	IPCC, 2006e IPCC, 2006e
Volatilization rate	2003	0.2 g / g	IPCC, 2006e
Volatilization rate	2004	0.2 g / g	IPCC, 2006e
Volatilization rate	2006	0.2 g / g	IPCC, 2006e
Volatilization rate	2007	0.2 g / g	IPCC, 2006e
Volatilization rate	2008	0.2 g / g	IPCC, 2006e
Volatilization rate	2009	0.2 g / g	IPCC, 2006e
Volatilization rate	2010	0.2 g / g	IPCC, 2006e
Volatilization rate	2011	0.2 g / g	IPCC, 2006e
Volatilization rate	2012	0.2 g / g	IPCC, 2006e
Volatilization rate	2013	0.2 g / g	IPCC, 2006e
Volatilization rate	2014	0.2 g / g	
stivity - Nitrogen in managed manure. Daire	, 00W0		
ctivity = Nitrogen in managed manure - Dairy - Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in managed manure - Dairy cows	1990	98.1 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	1991	101.37 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	1992	102.7 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	1993 1994	106.78 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows Nitrogen in managed manure - Dairy cows	1994	112.73 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows Nitrogen in managed manure - Dairy cows	1995	114.96 Gg (thousand tonnes) 118.6 Gg (thousand tonnes)	Compilation, see text Compilation, see text
Nitrogen in managed manure - Dairy cows	1997	126.16 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	1998	126.98 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	1999	128.35 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2000	135.31 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2001	136.75 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2002	147.96 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2003	150.83 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2004	146.38 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2005	149.98 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2006	154.01 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2007	160.98 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2008	156.13 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2009	152.33 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2010	156.48 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2011	155.95 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2012	156.61 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2013	151.79 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy cows	2014	155.03 Gg (thousand tonnes)	Compilation, see text
Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1993	7.500E-03	
Leached nitrogen emitted as N2O	1994	7.500E-03	IPCC, 2006e

1996

Leached nitrogen emitted as N2O

7.500E-03 IPCC, 2006e

oles Used in the Emissions Estimat	ion Equations	Values last updated on Wednesday, March 30, 2016
Leached nitrogen emitted as N2O	1997	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	1998	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	1999	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2000	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2001	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2002	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2003	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2004	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2005	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2006	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2007	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2008	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2009	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2010	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2011	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2012	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2013	7.500E-03 IPCC, 2006e
Leached nitrogen emitted as N2O	2014	7.500E-03 IPCC, 2006e
Leaching rate	1990	0.3 IPCC, 2006e
Leaching rate	1991	0.3 IPCC, 2006e
Leaching rate	1992	0.3 IPCC, 2006e
Leaching rate	1993	0.3 IPCC, 2006e
Leaching rate	1994	0.3 IPCC, 2006e
Leaching rate	1995	0.3 IPCC, 2006e
Leaching rate	1996	0.3 IPCC, 2006e
Leaching rate	1997	0.3 IPCC, 2006e
Leaching rate	1998	0.3 IPCC, 2006e
Leaching rate	1999	0.3 IPCC, 2006e
Leaching rate	2000	0.3 IPCC, 2006e
Leaching rate	2001	0.3 IPCC, 2006e
Leaching rate	2002	0.3 IPCC, 2006e
Leaching rate	2003	0.3 IPCC, 2006e
Leaching rate	2004	0.3 IPCC, 2006e
Leaching rate	2005	0.3 IPCC, 2006e
Leaching rate	2006	0.3 IPCC, 2006e
Leaching rate	2007	0.3 IPCC, 2006e
Leaching rate	2008	0.3 IPCC, 2006e
Leaching rate	2009	0.3 IPCC, 2006e
Leaching rate	2010	0.3 IPCC, 2006e
Leaching rate	2011	0.3 IPCC, 2006e
Leaching rate	2012	0.3 IPCC, 2006e
Leaching rate	2013	0.3 IPCC, 2006e
Leaching rate	2014	0.3 IPCC, 2006e
<u></u>		
Nitrogen emitted as N2O	1990 1991	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O		0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1992	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1993	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1994	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1995 1996	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e

es Used in the Emissions Estimati	•	Values last updated on Wednesday, March 30, 20
Nitrogen emitted as N2O	2003	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
-		
Redeposited nitrogen emitted as N2O	1990	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1991	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1992	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1993	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1994	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g/g IPCC, 2006e
	2010	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O		
Redeposited nitrogen emitted as N2O	2011	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Volatilization rate	1990	0.2 g / g IPCC, 2006e
Volatilization rate	1991	0.2 g / g IPCC, 2006e
Volatilization rate	1992	0.2 g / g IPCC, 2006e
Volatilization rate	1993	0.2 g / g IPCC, 2006e
Volatilization rate	1994	0.2 g / g IPCC, 2006e
Volatilization rate	1995	0.2 g / g IPCC, 2006e
Volatilization rate	1996	0.2 g / g IPCC, 2006e
Volatilization rate	1997	0.2 g / g IPCC, 2006e
Volatilization rate	1998	0.2 g / g IPCC, 2006e
Volatilization rate	1999	0.2 g / g IPCC, 2006e
Volatilization rate	2000	0.2 g / g IPCC, 2006e
Volatilization rate Volatilization rate	2001	0.2 g / g
Volatilization rate	2001	
		0.2 g / g IPCC, 2006e
Volatilization rate	2003	0.2 g / g IPCC, 2006e
Volatilization rate	2004	0.2 g / g IPCC, 2006e
Volatilization rate	2005	0.2 g / g IPCC, 2006e
Volatilization rate	2006	0.2 g / g IPCC, 2006e
Volatilization rate Volatilization rate	2007	0.2 g / g IPCC, 2006e
	2008	0.2 g / g IPCC, 2006e

es Used in the Emissions Estimation	-		on Wednesday, March 30, 20
Volatilization rate	2009	0.2 g / g	IPCC, 2006e
Volatilization rate	2010	0.2 g / g	IPCC, 2006e
Volatilization rate	2011	0.2 g / g	IPCC, 2006e
Volatilization rate	2012	0.2 g / g	IPCC, 2006e
Volatilization rate	2013	0.2 g / g	IPCC, 2006e
Volatilization rate	2014	0.2 g / g	IPCC, 2006e
tivity = Nitrogen in managed manure - Dairy i	heifers		
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in managed manure - Dairy heifers	1990	28.73 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	1991	27.85 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	1992	30.61 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	1993	30.84 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	1994	33.65 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	1995	34.85 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	1996	36.05 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	1997	36.59 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	1998	37.49 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	1999	38.3 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2000	38.66 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2001	40.1 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2002	41.35 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2003	42.06 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2004	37.72 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2005	39.49 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2006	40.67 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2007	40.38 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2008	39.28 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2009	38.58 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2010	37.37 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2011	37.41 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2012	41.1 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2013	38.26 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Dairy heifers	2014	36.9 Gg (thousand tonnes)	·
Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1994		IPCC, 2006e
Leached nitrogen emitted as N2O	1995		IPCC, 2006e
Leached nitrogen emitted as N2O	1996		IPCC, 2006e
Leached nitrogen emitted as N2O	1997		IPCC, 2006e
Leached nitrogen emitted as N2O	1998		IPCC, 2006e
Leached nitrogen emitted as N2O	1999		IPCC, 2006e
Leached nitrogen emitted as N2O	2000		IPCC, 2006e
Leached nitrogen emitted as N2O	2001		IPCC, 2006e
Leached nitrogen emitted as N2O	2002		IPCC, 2006e
Leached nitrogen emitted as N2O	2003		IPCC, 2006e
Leached nitrogen emitted as N2O	2004	7.500E-03	
Leached nitrogen emitted as N2O	2005	7.500E-03	
Leached nitrogen emitted as N2O	2006	7.500E-03	
Leached nitrogen emitted as N2O	2007		IPCC, 2006e
Leached nitrogen emitted as N2O	2008		IPCC, 2006e
Leached nitrogen emitted as N2O	2009		IPCC, 2006e
Leached nitrogen emitted as N2O	2010		IPCC, 2006e
Loadieu illiogen ellilleu as NZO	2010	7.500E-03	11 JU, 2000 0

Leached nitrogen emitted as N2O	2012	Values last updated	IPCC, 2006e
Leached nitrogen emitted as N2O	2012	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
·			
Leaching rate	1990	0.3	IPCC, 2006e
Leaching rate	1991	0.3	IPCC, 2006e
Leaching rate	1992	0.3	IPCC, 2006e
Leaching rate	1993	0.3	IPCC, 2006e
Leaching rate	1994	0.3	IPCC, 2006e
Leaching rate	1995	0.3	IPCC, 2006e
Leaching rate	1996	0.3	IPCC, 2006e
Leaching rate	1997	0.3	IPCC, 2006e
Leaching rate	1998	0.3	IPCC, 2006e
Leaching rate	1999	0.3	IPCC, 2006e
Leaching rate	2000	0.3	IPCC, 2006e
Leaching rate	2001	0.3	IPCC, 2006e
Leaching rate	2002	0.3	IPCC, 2006e
Leaching rate	2003	0.3	IPCC, 2006e
Leaching rate	2004	0.3	IPCC, 2006e
Leaching rate	2005	0.3	IPCC, 2006e
Leaching rate	2006	0.3	IPCC, 2006e
Leaching rate	2007	0.3	IPCC, 2006e
Leaching rate	2008	0.3	IPCC, 2006e
Leaching rate	2009	0.3	IPCC, 2006e
Leaching rate	2010	0.3	IPCC, 2006e
Leaching rate	2011	0.3	IPCC, 2006e
Leaching rate	2012	0.3	IPCC, 2006e
Leaching rate	2013	0.3	IPCC, 2006e
Leaching rate	2014	0.3	IPCC, 2006e
Nitrogen emitted as N2O	1990	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1991	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1992	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1993	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1994	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1995	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1996	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1997	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1998	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1999	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004		IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2006		IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2014	• •	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1991	0.01 g / g	
Redeposited nitrogen emitted as N2O	1992	0.01 g / g	IPCC, 2006e

Variables Used in the Emissions Estimation E	quations	Values last updated	on Wednesday, March 30, 2016
Redeposited nitrogen emitted as N2O	1993	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1994	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2010	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2011	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g/g	IPCC, 2006e
Volatilization rate	1990	0.2 g / g	IPCC, 2006e
Volatilization rate	1991	0.2 g / g	IPCC, 2006e
Volatilization rate	1992	0.2 g / g	IPCC, 2006e
Volatilization rate	1993	0.2 g / g	IPCC, 2006e
Volatilization rate	1994	0.2 g / g	IPCC, 2006e
Volatilization rate	1995	0.2 g / g	IPCC, 2006e
Volatilization rate	1996	0.2 g / g	IPCC, 2006e
Volatilization rate	1997	0.2 g / g	IPCC, 2006e
Volatilization rate	1998	0.2 g / g	IPCC, 2006e
Volatilization rate	1999	0.2 g / g	IPCC, 2006e
Volatilization rate	2000	0.2 g / g	IPCC, 2006e
Volatilization rate	2001	0.2 g / g	IPCC, 2006e
Volatilization rate	2002	0.2 g / g	IPCC, 2006e
Volatilization rate	2003	0.2 g / g	IPCC, 2006e
Volatilization rate	2004	0.2 g / g	IPCC, 2006e
Volatilization rate	2005	0.2 g / g	IPCC, 2006e
Volatilization rate	2006	0.2 g / g	IPCC, 2006e
Volatilization rate	2007	0.2 g / g	IPCC, 2006e
Volatilization rate	2008	0.2 g / g	IPCC, 2006e
Volatilization rate	2009	0.2 g / g	IPCC, 2006e
Volatilization rate	2010	0.2 g / g	IPCC, 2006e
Volatilization rate	2011	0.2 g / g	IPCC, 2006e
Volatilization rate	2012	0.2 g / g	IPCC, 2006e
Volatilization rate	2013	0.2 g / g	IPCC, 2006e
Volatilization rate	2014	0.2 g / g	IPCC, 2006e
Activity = Nitrogen in managed manure - Poultry			
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in managed manure - Poultry	1990	41.27 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	1991	39.39 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	1992	36.49 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	1993	32.32 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	1994	31.62 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Poultry	1995	31.55 Gg (thousand tonnes)	Compilation, see text

JIE	es used in the Emissions Estimation Ed	quations	values last updated	on wednesday, warch 30, 2016
	Nitrogen in managed manure - Poultry	1996	31.29 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	1997	30.36 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	1998	20.56 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	1999	19.93 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2000	21.2 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2001	21.18 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2002	20.62 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2003	19.51 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2004	17.85 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2005	17.05 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2006	17.67 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2007	18.08 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2008	17.33 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2009	16.83 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2010	17.03 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2011	16.29 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2012	16.07 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2013	14.07 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Poultry	2014	12.26 Gg (thousand tonnes)	Compilation, see text
	Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1994	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1995	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1996	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1997	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1998	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1999	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2000	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2001	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2002	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2003	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2004	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2005	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2006	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2007	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2008	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2009	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2010	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2011	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2012	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2014	7.500E-03	IPCC, 2006e
	Leaching rate	1990	0.3	IPCC, 2006e
	Leaching rate	1991	0.3	IPCC, 2006e
	Leaching rate	1992	0.3	IPCC, 2006e
	Leaching rate	1993	0.3	IPCC, 2006e
	Leaching rate	1994	0.3	IPCC, 2006e
	Leaching rate	1995	0.3	IPCC, 2006e
	Leaching rate	1996	0.3	IPCC, 2006e
	Leaching rate	1997	0.3	IPCC, 2006e
	Leaching rate	1998	0.3	IPCC, 2006e
	Leaching rate	1999	0.3	IPCC, 2006e
	Leaching rate	2000	0.3	IPCC, 2006e
	Leaching rate	2001	0.3	IPCC, 2006e
				5 00 (50

Looching rate	2002	0.3 IDCC 2006~
Leaching rate	2002	0.3 IPCC, 2006e
Leaching rate	2003	0.3 IPCC, 2006e
Leaching rate	2004	0.3 IPCC, 2006e
Leaching rate	2005	0.3 IPCC, 2006e
_eaching rate	2006	0.3 IPCC, 2006e
Leaching rate	2007	0.3 IPCC, 2006e
_eaching rate	2008	0.3 IPCC, 2006e
Leaching rate	2009	0.3 IPCC, 2006e
_eaching rate	2010	0.3 IPCC, 2006e
_eaching rate	2011	0.3 IPCC, 2006e
_eaching rate	2012	0.3 IPCC, 2006e
_eaching rate	2013	0.3 IPCC, 2006e
_eaching rate	2014	0.3 IPCC, 2006e
Nitrogen emitted as N2O	1990	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	1991	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	1992	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	1993	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	1994	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e
litrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
litrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
litrogen emitted as N2O	2003	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g / g IPCC, 2006e
Redeposited hitrogen emitted as N2O	1991	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1991	
•		
Redeposited nitrogen emitted as N2O	1993	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1994	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g/g IPCC, 2006e
todopounted introgett ettitted as INCO	2000	0.01 g/g II 00, 2000 0
Redeposited nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e

Variables Used in the Emissions Estimation	Equations	Values last updated	on Wednesday, March 30, 2016
Redeposited nitrogen emitted as N2O	2008	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2010	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2011	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g / g	IPCC, 2006e
Volatilization rate	1990	0.2 g / g	IPCC, 2006e
Volatilization rate	1991	0.2 g / g	IPCC, 2006e
Volatilization rate	1992	0.2 g / g	IPCC, 2006e
Volatilization rate	1993	0.2 g / g	IPCC, 2006e
Volatilization rate	1994	0.2 g / g	IPCC, 2006e
Volatilization rate	1995	0.2 g / g	IPCC, 2006e
Volatilization rate	1996	0.2 g / g	IPCC, 2006e
Volatilization rate	1997	0.2 g / g	IPCC, 2006e
Volatilization rate	1998	0.2 g / g	IPCC, 2006e
Volatilization rate	1999	0.2 g / g	IPCC, 2006e
Volatilization rate	2000	0.2 g / g	IPCC, 2006e
Volatilization rate	2001	0.2 g / g	IPCC, 2006e
Volatilization rate	2002	0.2 g / g	IPCC, 2006e
Volatilization rate	2003	0.2 g / g	IPCC, 2006e
Volatilization rate	2004	0.2 g / g	IPCC, 2006e
Volatilization rate	2005	0.2 g / g	IPCC, 2006e
Volatilization rate	2006	0.2 g / g	IPCC, 2006e
Volatilization rate	2007	0.2 g / g	IPCC, 2006e
Volatilization rate	2008	0.2 g / g	IPCC, 2006e
Volatilization rate	2009	0.2 g / g	IPCC, 2006e
Volatilization rate	2010	0.2 g / g	IPCC, 2006e
Volatilization rate	2011	0.2 g / g	IPCC, 2006e
Volatilization rate	2012	0.2 g / g	IPCC, 2006e
Volatilization rate	2013	0.2 g / g	IPCC, 2006e
Volatilization rate	2014	0.2 g / g	IPCC, 2006e
Activity = Nitrogen in managed manure - Sheep,	goat horse		
- Variable Name -	- Year -	- Value and Units -	- Reference -
	1990	1.36 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse Nitrogen in managed manure - Sheep, goat, horse		- '	•
	1991 1992	1.37 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse Nitrogen in managed manure - Sheep, goat, horse	1992	1.38 Gg (thousand tonnes)1.38 Gg (thousand tonnes)	Compilation, see text Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	1994	1.7 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	1995	1.98 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	1996	2.18 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	1997	2.41 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	1998	2.56 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	1999	2.82 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2000	3.03 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2000	3.31 Gg (thousand tonnes)	Compilation, see text Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2001	3.3 Gg (thousand tonnes)	Compilation, see text Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2002	3.46 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2003	3.54 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2004	3.82 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2005	3.76 Gg (thousand tonnes)	
	2006	3.63 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse	2007	3.62 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse		,	Compilation, see text
Nitrogen in managed manure - Sheep, goat, horse Nitrogen in managed manure - Sheep, goat, horse	2009 2010	3.79 Gg (thousand tonnes)3.71 Gg (thousand tonnes)	Compilation, see text Compilation, see text
ranogen in managed mandre - Sheep, goal, hoise	2010	o.r i og (illousallu tolliles)	Compilation, see text

וט	es used in the Emissions Estimation	Equations	values last updated	on wednesday, March 30, 2016
	Nitrogen in managed manure - Sheep, goat, horse	2011	3.71 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Sheep, goat, horse	2012	3.69 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Sheep, goat, horse	2013	3.64 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in managed manure - Sheep, goat, horse	2014	3.69 Gg (thousand tonnes)	Compilation, see text
	Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1994	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1995	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1996	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1997	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1998	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1999	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2000	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2001	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2002	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2003	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2004	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2005	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2006	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2007	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2008	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2009	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2010	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2011	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2012	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2014		IPCC, 2006e
	Leaching rate	1990	0.3	IPCC, 2006e
	Leaching rate	1991	0.3	IPCC, 2006e
	Leaching rate	1992	0.3	IPCC, 2006e
	Leaching rate	1993	0.3	IPCC, 2006e
	Leaching rate	1994 1995	0.3	IPCC, 2006e IPCC, 2006e
	Leaching rate Leaching rate	1996	0.3	IPCC, 2006e
	Leaching rate	1997	0.3	IPCC, 2006e
	Leaching rate	1998	0.3	IPCC, 2006e
	Leaching rate	1999	0.3	IPCC, 2006e
	Leaching rate	2000	0.3	IPCC, 2006e
	Leaching rate	2001	0.3	IPCC, 2006e
	Leaching rate	2002	0.3	IPCC, 2006e
	Leaching rate	2003	0.3	IPCC, 2006e
	Leaching rate	2004	0.3	IPCC, 2006e
	Leaching rate	2005	0.3	IPCC, 2006e
	Leaching rate	2006	0.3	IPCC, 2006e
	Leaching rate	2007	0.3	IPCC, 2006e
	Leaching rate	2008	0.3	IPCC, 2006e
	Leaching rate	2009	0.3	IPCC, 2006e
	Leaching rate	2010	0.3	IPCC, 2006e
	Leaching rate	2011	0.3	IPCC, 2006e
	Leaching rate	2012	0.3	IPCC, 2006e
	Leaching rate	2013	0.3	IPCC, 2006e
	Leaching rate	2014	0.3	IPCC, 2006e
	Nitrogen emitted as N2O	1990	0.01 g / g	IPCC, 2006e
	Nitrogen emitted as N2O	1991	0.01 g/g	IPCC, 2006e

Nitrogen emitted as N2O	1992	Values last updated on Wednesday, March 30, 20
Nitrogen emitted as N2O	1993	0.01 g / g
Nitrogen emitted as N2O	1994	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1991	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1992	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1993	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1994	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Volatilization rate	1990	0.2 g / g IPCC, 2006e
Volatilization rate	1991	0.2 g / g IPCC, 2006e
Volatilization rate	1992	0.2 g / g IPCC, 2006e

1995

1996

1997

Volatilization rate

Volatilization rate

Volatilization rate

0.2 g / g IPCC, 2006e

0.2 g / g IPCC, 2006e

0.2 g / g IPCC, 2006e

ariables Used in the Emissions Estimati	ion Equations	Values last updated	on Wednesday, March 30, 2016
Volatilization rate	1998	0.2 g / g	IPCC, 2006e
Volatilization rate	1999	0.2 g / g	IPCC, 2006e
Volatilization rate	2000	0.2 g / g	IPCC, 2006e
Volatilization rate	2001	0.2 g / g	IPCC, 2006e
Volatilization rate	2002	0.2 g / g	IPCC, 2006e
Volatilization rate	2003	0.2 g / g	IPCC, 2006e
Volatilization rate	2004	0.2 g / g	IPCC, 2006e
Volatilization rate	2005	0.2 g / g	IPCC, 2006e
Volatilization rate	2006	0.2 g / g	IPCC, 2006e
Volatilization rate	2007	0.2 g / g	IPCC, 2006e
Volatilization rate	2008	0.2 g / g	IPCC, 2006e
Volatilization rate	2009	0.2 g / g	IPCC, 2006e
Volatilization rate	2010	0.2 g / g	IPCC, 2006e
Volatilization rate	2011	0.2 g / g	IPCC, 2006e
Volatilization rate	2012	0.2 g / g	IPCC, 2006e
Volatilization rate	2013	0.2 g / g	IPCC, 2006e
Volatilization rate	2014	0.2 g / g	IPCC, 2006e
Activity = Nitrogen in managed manure - Sw	ine		
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in managed manure - Swine	1990	757.55 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	1991	845.25 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	1992	1.05 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	1993	1.05 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	1994	1.03 Gg (thousand tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	1995	987.46 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	1996	864.36 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	1997	882.06 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	1998	824.61 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	1999	781.17 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2000	639.2 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2001	475.38 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2002	683.29 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2003	640.43 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2004	682.36 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2005	675.76 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2006	676.32 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2007	765.1 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2008	386.5 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2009	537.25 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2010	507.69 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2011	536.09 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2012	527.59 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2013	487.04 Mg (tonnes)	Compilation, see text
Nitrogen in managed manure - Swine	2014	540.51 Mg (tonnes)	Compilation, see text
Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1994	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1995	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1996	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1997	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1998	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1999	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2000	7.500E-03	IPCC, 2006e

	ion Equations	<i>,</i>	on Wednesday, March 30, 20
Leached nitrogen emitted as N2O	2001		IPCC, 2006e
Leached nitrogen emitted as N2O	2002	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2003	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2004	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2005	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2006	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2007	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2008	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2009		
Leached nitrogen emitted as N2O	2010		IPCC, 2006e
Leached nitrogen emitted as N2O	2011	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2012		IPCC, 2006e
Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
			·
Leaching rate	1990	0.3	IPCC, 2006e
Leaching rate	1991	0.3	IPCC, 2006e
Leaching rate	1992	0.3	IPCC, 2006e
Leaching rate	1993	0.3	IPCC, 2006e
Leaching rate	1994	0.3	IPCC, 2006e
Leaching rate	1995	0.3	IPCC, 2006e
Leaching rate	1996	0.3	IPCC, 2006e
Leaching rate	1997	0.3	IPCC, 2006e
Leaching rate	1998	0.3	IPCC, 2006e
Leaching rate	1999	0.3	IPCC, 2006e
Leaching rate	2000	0.3	IPCC, 2006e
Leaching rate	2001	0.3	IPCC, 2006e
Leaching rate	2002	0.3	IPCC, 2006e
Leaching rate	2003	0.3	IPCC, 2006e
Leaching rate	2004	0.3	IPCC, 2006e
Leaching rate	2005	0.3	IPCC, 2006e
Leaching rate	2006	0.3	IPCC, 2006e
Leaching rate	2007	0.3	IPCC, 2006e
	2008	0.3	IPCC, 2006e
Leaching rate			·
Leaching rate	2009	0.3	IPCC, 2006e
Leaching rate	2010	0.3	IPCC, 2006e
Leaching rate	2011	0.3	IPCC, 2006e
Leaching rate	2012	0.3	IPCC, 2006e
Leaching rate	2013	0.3	IPCC, 2006e
Leaching rate	2014	0.3	IPCC, 2006e
Nitrogen emitted as N2O	1990	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1991	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1992	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1993	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1994	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1995	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1996	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1997	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1998	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1999	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	• •	
	2002	• •	
Nitrogen emitted as N2O	-	5.5. g/ g	· - , -
Nitrogen emitted as N2O Nitrogen emitted as N2O	2003	0.01 a / a	IPCC. 2006e
Nitrogen emitted as N2O	2003 2004	• •	IPCC, 2006e
•	2003 2004 2005		IPCC, 2006e

es Used in the Emissions Estimati	•	Values last updated on Wednesday, March 30, 2
Nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g / g IPCC, 2006e
	1991	
Redeposited nitrogen emitted as N2O		0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1992	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1993	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1994	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
, ,		
Volatilization rate	1990	0.2 g / g IPCC, 2006e
Volatilization rate	1991	0.2 g / g IPCC, 2006e
Volatilization rate	1992	0.2 g / g IPCC, 2006e
Volatilization rate	1993	0.2 g / g IPCC, 2006e
Volatilization rate	1994	0.2 g / g IPCC, 2006e
Volatilization rate	1995	0.2 g / g IPCC, 2006e
Volatilization rate	1996	0.2 g / g IPCC, 2006e
Volatilization rate	1997	0.2 g / g IPCC, 2006e
Volatilization rate	1998	0.2 g / g IPCC, 2006e
Volatilization rate	1999	0.2 g / g IPCC, 2006e
Volatilization rate	2000	0.2 g / g IPCC, 2006e
Volatilization rate	2001	0.2 g / g IPCC, 2006e
Volatilization rate	2002	0.2 g / g IPCC, 2006e
Volatilization rate	2003	0.2 g / g IPCC, 2006e
Volatilization rate	2004	0.2 g / g IPCC, 2006e
Volatilization rate	2005	0.2 g / g IPCC, 2006e
Volatilization rate	2006	0.2 g / g IPCC, 2006e
Volatilization rate	2007	0.2 g / g IPCC, 2006e
Volatilization rate	2008	0.2 g / g IPCC, 2006e
Volatilization rate	2009	0.2 g / g IPCC, 2006e
Volatilization rate	2010	0.2 g / g IPCC, 2006e
Volatilization rate	2011	0.2 g / g IPCC, 2006e
· S.S.IIIEGUOTI IGGO	2011	5.2 g / g 11 55, 20000

Volatilization rate	2013	0.2 g / g IPCC, 2006e
Volatilization rate	2014	0.2 g / g IPCC, 2006e

Activity = Nitrogen in unmanaged manure - Beef cattle

Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in unmanaged manure - Beef cattle	1990	119.1 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	1991	110.74 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	1992	112.75 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	1993	111.44 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	1994	112.27 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	1995	113.52 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	1996	110.95 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	1997	109.61 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	1998	109.31 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	1999	109.93 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2000	106.34 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2001	105.36 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2002	104.73 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2003	103.51 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2004	103.3 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2005	106.31 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2006	102.96 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2007	88.26 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2008	85.21 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2009	85.08 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2010	84.08 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2011	81.65 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2012	83.11 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2013	81.91 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Beef cattle	2014	81.92 Gg (thousand tonnes)	Compilation, see text
Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	1994	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	1995	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	1996	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	1997	7.500E-03	IPCC, 2006e
eached nitrogen emitted as N2O	1998	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1999	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	2000	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	2001	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	2002	7.500E-03	IPCC, 2006e
eached nitrogen emitted as N2O	2003	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	2004	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	2005	7.500E-03	IPCC, 2006e
eached nitrogen emitted as N2O	2006	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2007	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	2008	7.500E-03	IPCC, 2006e
eached nitrogen emitted as N2O	2009	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	2010	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	2011	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	2012	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
_eached nitrogen emitted as N2O	2014	7.500E-03	IPCC, 2006e
_eaching rate	1990	0.3	IPCC, 2006e

ables Used in the Emissions Estimation Equations		Values last updated on Wednesday, March 30, 2016		
Leaching rate	1991	0.3 IPCC, 2006e		
Leaching rate	1992	0.3 IPCC, 2006e		
Leaching rate	1993	0.3 IPCC, 2006e		
Leaching rate	1994	0.3 IPCC, 2006e		
Leaching rate	1995	0.3 IPCC, 2006e		
Leaching rate	1996	0.3 IPCC, 2006e		
Leaching rate	1997	0.3 IPCC, 2006e		
Leaching rate	1998	0.3 IPCC, 2006e		
Leaching rate	1999	0.3 IPCC, 2006e		
Leaching rate	2000	0.3 IPCC, 2006e		
Leaching rate	2001	0.3 IPCC, 2006e		
Leaching rate	2002	0.3 IPCC, 2006e		
Leaching rate	2003	0.3 IPCC, 2006e		
Leaching rate	2004	0.3 IPCC, 2006e		
Leaching rate	2005	0.3 IPCC, 2006e		
Leaching rate	2006	0.3 IPCC, 2006e		
	2006	0.3 IPCC, 2006e 0.3 IPCC, 2006e		
Leaching rate				
Leaching rate	2008	0.3 IPCC, 2006e		
Leaching rate	2009	0.3 IPCC, 2006e		
Leaching rate	2010	0.3 IPCC, 2006e		
Leaching rate	2011	0.3 IPCC, 2006e		
Leaching rate	2012	0.3 IPCC, 2006e		
Leaching rate	2013	0.3 IPCC, 2006e		
Leaching rate	2014	0.3 IPCC, 2006e		
Nitrogen emitted as N2O	1990	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	1991	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	1992	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	1993	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	1994	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	1999	0.01 g/g IPCC, 2006e		
Nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	2003	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	2010	0.01 g/g IPCC, 2006e		
Nitrogen emitted as N2O	2010	0.01 g/g IPCC, 2006e		
•	2011			
Nitrogen emitted as N2O		0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e		
Nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e		
Redeposited nitrogen emitted as N2O	1990	0.01 g/g IPCC, 2006e		
Redeposited nitrogen emitted as N2O	1991	0.01 g/g IPCC, 2006e		
Redeposited nitrogen emitted as N2O	1992	0.01 g/g IPCC, 2006e		
Redeposited nitrogen emitted as N2O	1993	0.01 g/g IPCC, 2006e		
Redeposited nitrogen emitted as N2O	1994	0.01 g/g IPCC, 2006e		
Redeposited nitrogen emitted as N2O	1995	0.01 g/g IPCC, 2006e		
Redeposited nitrogen emitted as N2O	1996	0.01 g/g IPCC, 2006e		

es Used in the Emissions Estimat	•	Values last updated on Wednesday, March 30, 20
Redeposited nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Volatilization rate	1990	0.2 g / g IPCC, 2006e
Volatilization rate	1991	0.2 g / g IPCC, 2006e
Volatilization rate	1992	0.2 g / g IPCC, 2006e
Volatilization rate	1993	0.2 g / g IPCC, 2006e
Volatilization rate	1994	0.2 g / g IPCC, 2006e
Volatilization rate	1995	0.2 g / g IPCC, 2006e
Volatilization rate	1996	0.2 g / g IPCC, 2006e
Volatilization rate	1997	0.2 g / g IPCC, 2006e
Volatilization rate	1998	0.2 g / g IPCC, 2006e
Volatilization rate	1999	0.2 g / g IPCC, 2006e
Volatilization rate	2000	0.2 g / g IPCC, 2006e
Volatilization rate	2001	0.2 g / g IPCC, 2006e
Volatilization rate	2002	0.2 g / g IPCC, 2006e
Volatilization rate	2003	0.2 g / g IPCC, 2006e
Volatilization rate	2004	0.2 g / g IPCC, 2006e
Volatilization rate	2005	0.2 g / g IPCC, 2006e
Volatilization rate	2006	0.2 g / g IPCC, 2006e
Volatilization rate	2007	0.2 g / g IPCC, 2006e
Volatilization rate	2008	0.2 g / g IPCC, 2006e
Volatilization rate	2009	0.2 g / g IPCC, 2006e
Volatilization rate	2010	0.2 g / g IPCC, 2006e

Activity = Nitrogen in unmanaged manure - Dairy cows

Volatilization rate

Volatilization rate

Volatilization rate

Volatilization rate

- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in unmanaged manure - Dairy cows	1990	22.71 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	1991	23.47 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	1992	23.78 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	1993	24.13 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	1994	24.86 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	1995	24.72 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	1996	24.86 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	1997	25.76 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	1998	25.69 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Dairy cows	1999	25.74 Gg (thousand tonnes)	Compilation, see text

2011

2012

2013

2014

0.2 g / g IPCC, 2006e

DIE	es used in the Emissions Estimation	Equations	values last updated	on wednesday, warch 30, 2016
	Nitrogen in unmanaged manure - Dairy cows	2000	26.89 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2001	26.95 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2002	28.93 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2003	29.22 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2004	28.09 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2005	28.52 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2006	28.9 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2007	29.96 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2008	29.05 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2009	28.3 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2010	29.07 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2011	28.98 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2012	29.1 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2013	28.2 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy cows	2014	28.8 Gg (thousand tonnes)	Compilation, see text
_	Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1994	7.500E-03	
	Leached nitrogen emitted as N2O	1995		IPCC, 2006e
	Leached nitrogen emitted as N2O	1996		IPCC, 2006e
	Leached nitrogen emitted as N2O	1997		IPCC, 2006e
	Leached nitrogen emitted as N2O	1998	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	1999	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2000	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2001	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2002	7.500E-03	
	Leached nitrogen emitted as N2O	2003		IPCC, 2006e
	Leached nitrogen emitted as N2O	2004		IPCC, 2006e
	Leached nitrogen emitted as N2O	2005	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2006		IPCC, 2006e
	Leached nitrogen emitted as N2O	2007	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2008	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2009	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2010	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2011	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2012	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
	Leached nitrogen emitted as N2O	2014	7.500E-03	IPCC, 2006e
_	Leaching rate	1990	0.3	IPCC, 2006e
	Leaching rate	1991	0.3	IPCC, 2006e
	Leaching rate	1992	0.3	IPCC, 2006e
	Leaching rate	1993	0.3	IPCC, 2006e
	Leaching rate	1994	0.3	IPCC, 2006e
	Leaching rate	1995	0.3	IPCC, 2006e
	Leaching rate	1996	0.3	IPCC, 2006e
	Leaching rate	1997	0.3	IPCC, 2006e
	Leaching rate	1998	0.3	IPCC, 2006e
	Leaching rate	1999	0.3	IPCC, 2006e
	Leaching rate	2000	0.3	IPCC, 2006e
	Leaching rate	2001	0.3	IPCC, 2006e
	Leaching rate	2002	0.3	IPCC, 2006e
	Leaching rate	2003	0.3	IPCC, 2006e
	Leaching rate	2004	0.3	IPCC, 2006e
	Leaching rate	2005	0.3	IPCC, 2006e

	tion Equations	Values last updated	IDOO OOOS
Leaching rate	2006		IPCC, 2006e
Leaching rate	2007	0.3	IPCC, 2006e
Leaching rate	2008	0.3	IPCC, 2006e
Leaching rate	2009	0.3	IPCC, 2006e
Leaching rate	2010	0.3	IPCC, 2006e
Leaching rate	2011	0.3	IPCC, 2006e
Leaching rate	2012	0.3	IPCC, 2006e
Leaching rate	2013	0.3	IPCC, 2006e
Leaching rate	2014	0.3	IPCC, 2006e
Nitrogen emitted as N2O	1990	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1991	• •	IPCC, 2006e
Nitrogen emitted as N2O	1992	• •	IPCC, 2006e
•	1993	• •	IPCC, 2006e
Nitrogen emitted as N2O		• •	
Nitrogen emitted as N2O	1994	• •	IPCC, 2006e
Nitrogen emitted as N2O	1995	• •	IPCC, 2006e
Nitrogen emitted as N2O	1996		IPCC, 2006e
Nitrogen emitted as N2O	1997	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1998	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1999	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2004	• •	IPCC, 2006e
Nitrogen emitted as N2O	2005	• •	IPCC, 2006e
•		• •	
Nitrogen emitted as N2O	2006	• •	IPCC, 2006e
Nitrogen emitted as N2O	2007	• •	IPCC, 2006e
Nitrogen emitted as N2O	2008	• •	IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1991	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1992	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1993	0 0	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1994	• •	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995		IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g/g	·
·		0 0	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	• •	IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	• •	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	• •	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g/g	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	0.01 g/a	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	• •	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	• •	IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009		IPCC, 2006e
A CONSTRUCTION OF THE CONTROL OF THE	2000	0.01 g / g	50, 20000
Redeposited nitrogen emitted as N2O	2010	0.01 g / g	IPCC, 2006e

Variable	es Used in the Emissions Estimati	on Equations	Values last updated	on Wednesday, March 30, 2016
	Redeposited nitrogen emitted as N2O	2012	0.01 g / g	IPCC, 2006e
	Redeposited nitrogen emitted as N2O	2013	0.01 g/g	IPCC, 2006e
_	Redeposited nitrogen emitted as N2O	2014	0.01 g/g	IPCC, 2006e
	Volatilization rate	1990	0.2 g / g	IPCC, 2006e
	Volatilization rate	1991	0.2 g / g	IPCC, 2006e
	Volatilization rate	1992	0.2 g / g	IPCC, 2006e
	Volatilization rate	1993	0.2 g / g	IPCC, 2006e
	Volatilization rate	1994	0.2 g / g	IPCC, 2006e
	Volatilization rate	1995	0.2 g / g	IPCC, 2006e
	Volatilization rate	1996	0.2 g / g	IPCC, 2006e
	Volatilization rate	1997	0.2 g / g	IPCC, 2006e
	Volatilization rate	1998	0.2 g / g	IPCC, 2006e
	Volatilization rate	1999	0.2 g / g	IPCC, 2006e
	Volatilization rate	2000	0.2 g / g	IPCC, 2006e
	Volatilization rate	2001		IPCC, 2006e
	Volatilization rate	2002		IPCC, 2006e
	Volatilization rate	2003		IPCC, 2006e
	Volatilization rate	2004	• •	IPCC, 2006e
	Volatilization rate	2005		IPCC, 2006e
	Volatilization rate	2006		IPCC, 2006e
	Volatilization rate	2007		IPCC, 2006e
	Volatilization rate	2008		IPCC, 2006e
	Volatilization rate	2009		IPCC, 2006e
	Volatilization rate	2010		IPCC, 2006e
	Volatilization rate	2011		IPCC, 2006e
	Volatilization rate	2012		IPCC, 2006e
	Volatilization rate Volatilization rate	2013 2014		IPCC, 2006e IPCC, 2006e
Acti	ivity = Nitrogen in unmanaged manure - L	Dairy heifers		
	- Variable Name -	- Year -	- Value and Units -	- Reference -
	Nitrogen in unmanaged manure - Dairy heifers	1990	5.12 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	1991	4.96 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	1992	5.46 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	1993	5.36 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	1994	5.7 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	1995	5.75 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	1996	5.79 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	1997	5.72 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	1998	5.8 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	1999	5.87 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2000	5.87 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2001	6.03 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2002	6.16 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2003	6.27 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2004	5.62 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2005	5.89 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2006	6.06 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2007	6.02 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2008	5.86 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2009	5.75 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2010	5.57 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2011	5.58 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2012	6.13 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2013	5.7 Gg (thousand tonnes)5.5 Gg (thousand tonnes)	Compilation, see text
	Nitrogen in unmanaged manure - Dairy heifers	2014		Compilation, see text

es Used in the Emissions Estimat	•	Values last updated	·
Leached nitrogen emitted as N2O Leached nitrogen emitted as N2O	1990 1991		IPCC, 2006e IPCC, 2006e
	1992		IPCC, 2006e
Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1994	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O Leached nitrogen emitted as N2O	1995		IPCC, 2006e
· ·			IPCC, 2006e
Leached nitrogen emitted as N2O	1996		,
Leached nitrogen emitted as N2O	1997		IPCC, 2006e
Leached nitrogen emitted as N2O	1998		IPCC, 2006e
Leached nitrogen emitted as N2O	1999		IPCC, 2006e
Leached nitrogen emitted as N2O	2000		IPCC, 2006e
Leached nitrogen emitted as N2O	2001	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2002		IPCC, 2006e
Leached nitrogen emitted as N2O	2003		IPCC, 2006e
Leached nitrogen emitted as N2O	2004		IPCC, 2006e
Leached nitrogen emitted as N2O	2005		IPCC, 2006e
Leached nitrogen emitted as N2O	2006	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2007		IPCC, 2006e
Leached nitrogen emitted as N2O	2008	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2009	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2010		IPCC, 2006e
Leached nitrogen emitted as N2O	2011		IPCC, 2006e
Leached nitrogen emitted as N2O	2012		IPCC, 2006e
Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2014	7.500E-03	IPCC, 2006e
Leaching rate	1990	0.3	IPCC, 2006e
Leaching rate	1991	0.3	IPCC, 2006e
Leaching rate	1992	0.3	IPCC, 2006e
Leaching rate	1993	0.3	IPCC, 2006e
Leaching rate	1994	0.3	IPCC, 2006e
Leaching rate	1995		IPCC, 2006e
Leaching rate	1996	0.3	IPCC, 2006e
Leaching rate	1997	0.3	IPCC, 2006e
Leaching rate	1998	0.3	IPCC, 2006e
Leaching rate	1999	0.3	IPCC, 2006e
Leaching rate	2000	0.3	IPCC, 2006e
Leaching rate	2001	0.3	IPCC, 2006e
Leaching rate	2002	0.3	IPCC, 2006e
Leaching rate	2003	0.3	IPCC, 2006e
Leaching rate	2004	0.3	IPCC, 2006e
Leaching rate	2005	0.3	IPCC, 2006e
Leaching rate	2006	0.3	IPCC, 2006e
Leaching rate	2007	0.3	IPCC, 2006e
Leaching rate	2008	0.3	IPCC, 2006e
Leaching rate	2009	0.3	IPCC, 2006e
Leaching rate	2010	0.3	IPCC, 2006e
Leaching rate	2011	0.3	IPCC, 2006e
Leaching rate	2012	0.3	IPCC, 2006e
Leaching rate	2013	0.3	IPCC, 2006e
Leaching rate	2014	0.3	IPCC, 2006e
Nitrogen emitted as N2O	1990	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1991	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1992	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1993	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	100/		IPCC 2006e

1994

1995

Nitrogen emitted as N2O

Nitrogen emitted as N2O

0.01 g/g IPCC, 2006e

0.01 g/g IPCC, 2006e

es Used in the Emissions Estimati		Values last updated on Wednesday, March 30, 20
Nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	1997	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	1998	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1991	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1992	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1993	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1994	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	
,		0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Volatilization rate	1990	0.2 g / g IPCC, 2006e
Volatilization rate	1991	0.2 g / g IPCC, 2006e
Volatilization rate	1992	0.2 g / g IPCC, 2006e
Volatilization rate	1993	0.2 g / g IPCC, 2006e
Volatilization rate	1994	0.2 g / g IPCC, 2006e
Volatilization rate	1995	0.2 g / g IPCC, 2006e
Volatilization rate	1996	0.2 g / g IPCC, 2006e
Volatilization rate	1997	0.2 g / g IPCC, 2006e
Volatilization rate	1998	0.2 g / g IPCC, 2006e
Volatilization rate	1999	0.2 g / g IPCC, 2006e
Volatilization rate	2000	0.2 g / g IPCC, 2006e
Volatilization rate	2001	0.2 g / g IPCC, 2006e

Volatilization rate	on Equations 2002	0.2 g / g	on Wednesday, March 30, 201 IPCC, 2006e
Volatilization rate	2002	• •	
Volatilization rate	2003	0.2 g / g	IPCC, 2006e
	2004	0.2 g / g	IPCC, 2006e
Volatilization rate		0.2 g / g	IPCC, 2006e
Volatilization rate	2006	0.2 g / g	IPCC, 2006e
Volatilization rate	2007	0.2 g / g	IPCC, 2006e
Volatilization rate	2008	0.2 g / g	IPCC, 2006e
Volatilization rate	2009	0.2 g / g	IPCC, 2006e
Volatilization rate	2010	0.2 g / g	IPCC, 2006e
Volatilization rate	2011	0.2 g / g	IPCC, 2006e
Volatilization rate	2012	0.2 g / g	IPCC, 2006e
Volatilization rate	2013	0.2 g / g	IPCC, 2006e
Volatilization rate	2014	0.2 g / g	IPCC, 2006e
Activity = Nitrogen in unmanaged manure - Po	oultry		
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in unmanaged manure - Poultry	1990	393.17 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	1991	374 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	1992	346.17 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	1993	301.06 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	1994	293.45 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	1995	302.96 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	1996	301.67 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	1997	287.25 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	1998	156.72 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	1999	144.38 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2000	164.66 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2001	166.92 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2002	162.37 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2003	155.54 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2004	141.66 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2005	129.77 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2006	140.22 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2007	134.36 Mg (tonnes)	•
Nitrogen in unmanaged manure - Poultry	2008	127.78 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2009	123.73 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2010	125.38 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2011	111.77 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2012	111.85 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2013	98.8 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Poultry	2014	88.27 Mg (tonnes)	Compilation, see text
Leached nitrogen emitted as N2O	1990 1991	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O		7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1994	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1995	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1996	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1997	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1998	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1999	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2000	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2001	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2002	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2003	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2004	7.500E-03	IPCC, 2006e

es Used in the Emissions Estima	•	Values last updated o	<u> </u>
Leached nitrogen emitted as N2O	2005	7.500E-03	•
Leached nitrogen emitted as N2O	2006		IPCC, 2006e
Leached nitrogen emitted as N2O	2007		IPCC, 2006e
Leached nitrogen emitted as N2O	2008	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2009	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2010	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2011	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2012	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2014	7.500E-03	IPCC, 2006e
Leaching rate	1990	0.3	IPCC, 2006e
Leaching rate	1991		IPCC, 2006e
Leaching rate	1992		IPCC, 2006e
•			
Leaching rate	1993		IPCC, 2006e
Leaching rate	1994		IPCC, 2006e
Leaching rate	1995		IPCC, 2006e
Leaching rate	1996		IPCC, 2006e
Leaching rate	1997	0.3	IPCC, 2006e
Leaching rate	1998	0.3	IPCC, 2006e
Leaching rate	1999	0.3	IPCC, 2006e
Leaching rate	2000	0.3	IPCC, 2006e
Leaching rate	2001	0.3	IPCC, 2006e
Leaching rate	2002		IPCC, 2006e
_eaching rate	2003		IPCC, 2006e
_eaching rate	2004		IPCC, 2006e
Leaching rate	2005		IPCC, 2006e
_eaching rate	2006		IPCC, 2006e
•			
Leaching rate	2007		IPCC, 2006e
Leaching rate	2008		IPCC, 2006e
Leaching rate	2009		IPCC, 2006e
Leaching rate	2010		IPCC, 2006e
Leaching rate	2011		IPCC, 2006e
_eaching rate	2012		IPCC, 2006e
_eaching rate	2013	0.3	IPCC, 2006e
_eaching rate	2014	0.3	IPCC, 2006e
Nitrogen emitted as N2O	1990	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1991	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1992	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1993		IPCC, 2006e
Nitrogen emitted as N2O	1994		IPCC, 2006e
Nitrogen emitted as N2O	1995		IPCC, 2006e
Nitrogen emitted as N2O	1996	0 0	IPCC, 2006e
Nitrogen emitted as N2O	1997		IPCC, 2006e
· ·			
Nitrogen emitted as N2O	1998		IPCC, 2006e
Nitrogen emitted as N2O	1999		IPCC, 2006e
Nitrogen emitted as N2O	2000		IPCC, 2006e
Nitrogen emitted as N2O	2001		IPCC, 2006e
Nitrogen emitted as N2O	2002	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2003	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2004	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2007	• •	IPCC, 2006e
Nitrogen emitted as N2O	2008		IPCC, 2006e
Nitrogen emitted as N2O	2009		IPCC, 2006e
	2000	0.01 g/g	,

les Used in the Emissions Estimation	on Equations	Values last updated on Wednesday, March 30, 2016
Nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1991	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1992	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1993	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1994	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g/g IPCC, 2006e
Volatilization rate	1990	0.2 g / g IPCC, 2006e
Volatilization rate	1991	0.2 g / g IPCC, 2006e
Volatilization rate	1992	0.2 g / g IPCC, 2006e
Volatilization rate	1993	0.2 g / g IPCC, 2006e
Volatilization rate	1994	0.2 g / g IPCC, 2006e
Volatilization rate	1995	0.2 g / g IPCC, 2006e
Volatilization rate	1996	0.2 g / g IPCC, 2006e
Volatilization rate	1997	0.2 g / g IPCC, 2006e
Volatilization rate	1998	0.2 g / g IPCC, 2006e
Volatilization rate	1999	0.2 g / g IPCC, 2006e
Volatilization rate	2000	0.2 g / g IPCC, 2006e
Volatilization rate	2001	0.2 g / g IPCC, 2006e
Volatilization rate	2002	0.2 g / g IPCC, 2006e
Volatilization rate	2003	0.2 g / g IPCC, 2006e
Volatilization rate	2004	0.2 g / g IPCC, 2006e
Volatilization rate	2005	0.2 g / g IPCC, 2006e
Volatilization rate	2006	0.2 g / g IPCC, 2006e
Volatilization rate	2007	0.2 g / g IPCC, 2006e
Volatilization rate	2008	0.2 g / g IPCC, 2006e
Volatilization rate	2009	0.2 g / g IPCC, 2006e
Volatilization rate	2010	0.2 g / g IPCC, 2006e
Volatilization rate	2011	0.2 g / g IPCC, 2006e
Volatilization rate	2012	0.2 g / g IPCC, 2006e
Volatilization rate	2013	0.2 g / g IPCC, 2006e
Volatilization rate	2014	0.2 g / g IPCC, 2006e

Activity = Nitrogen in unmanaged manure - Sheep, goat, horse

avity = ratiogen in animanagea manare			
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in unmanaged manure - Sheep, goat, h	norse 1990	28.26 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 1991	28.52 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 1992	28.38 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 1993	27.39 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 1994	28.86 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, h	norse 1995	27.95 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, h	norse 1996	26.72 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, h	norse 1997	26.1 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, h	norse 1998	25.4 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 1999	24.91 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2000	24.47 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2001	24.76 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2002	25.77 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2003	28.43 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2004	30.73 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2005	34.03 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2006	34.11 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2007	33.29 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2008	32.82 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2009	33.99 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2010	34.18 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2011	34.54 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I	norse 2012	34.48 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I		34.34 Gg (thousand tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Sheep, goat, I		34.52 Gg (thousand tonnes)	Compilation, see text
Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1994	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1995	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1996	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1997		IPCC, 2006e
Leached nitrogen emitted as N2O	1998	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1999	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2000	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2001	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2002	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2002	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2003	7.500E-03	IPCC, 2006e
•	2004		
Leached nitrogen emitted as N2O	2005	7.500E-03 7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O Leached nitrogen emitted as N2O	2006	7.500E-03 7.500E-03	IPCC, 2006e IPCC, 2006e
ŭ			
Leached nitrogen emitted as N2O	2008	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2009	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2010	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2011	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2012	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2014	7.500E-03	IPCC, 2006e
Leaching rate	1990	0.3	IPCC, 2006e
Leaching rate	1991	0.3	IPCC, 2006e
Leaching rate	1992	0.3	IPCC, 2006e

√ariab l	ables Used in the Emissions Estimation Equations		Values last updated on Wednesday, March 30, 2016		
	Leaching rate	1993	0.3	IPCC, 2006e	
	Leaching rate	1994	0.3	IPCC, 2006e	
	Leaching rate	1995	0.3	IPCC, 2006e	
	Leaching rate	1996	0.3	IPCC, 2006e	
	Leaching rate	1997	0.3	IPCC, 2006e	
	Leaching rate	1998	0.3	IPCC, 2006e	
	Leaching rate	1999	0.3	IPCC, 2006e	
	Leaching rate	2000	0.3	IPCC, 2006e	
	Leaching rate	2001	0.3	IPCC, 2006e	
	Leaching rate	2002	0.3	IPCC, 2006e	
	Leaching rate	2003	0.3	IPCC, 2006e	
	Leaching rate	2004	0.3	IPCC, 2006e	
	Leaching rate	2005	0.3	IPCC, 2006e	
	Leaching rate	2006	0.3	IPCC, 2006e	
	Leaching rate	2007	0.3	IPCC, 2006e	
	Leaching rate	2008	0.3	IPCC, 2006e	
	Leaching rate	2009	0.3	IPCC, 2006e	
	Leaching rate	2010	0.3	IPCC, 2006e	
	Leaching rate	2011	0.3	IPCC, 2006e	
	Leaching rate	2012	0.3	IPCC, 2006e	
	Leaching rate	2013	0.3	IPCC, 2006e	
	Leaching rate	2014	0.3	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	1990	0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	1991	0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	1992	0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	1993	0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	1994	0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	1995	0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	1996	0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	1997	0.01 g/g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	1998	0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	1999	0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	2000		IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	2000	0.01 g/g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	2002	0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	2002	0.01 g/g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	2004	0.01 g/g	IPCC, 2006e	
	,	2005		·	
	Redeposited nitrogen emitted as N2O		0.01 g/g		
	Redeposited nitrogen emitted as N2O Redeposited nitrogen emitted as N2O	2006 2007	0.01 g / g 0.01 g / g	IPCC, 2006e IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	2007	0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	2009		IPCC, 2006e	
	•	2010			
	Redeposited nitrogen emitted as N2O		0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	2011			
	Redeposited nitrogen emitted as N2O	2012		IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	2013	0.01 g / g	IPCC, 2006e	
	Redeposited nitrogen emitted as N2O	2014	0.01 g / g	IPCC, 2006e	
	Volatilization rate	1990	0.2 g / g	IPCC, 2006e	
	Volatilization rate	1991	0.2 g / g	IPCC, 2006e	
	Volatilization rate	1992	0.2 g / g	IPCC, 2006e	
	Volatilization rate	1993	0.2 g / g	IPCC, 2006e	
	Volatilization rate	1994	0.2 g / g	IPCC, 2006e	
	Volatilization rate	1995	0.2 g / g	IPCC, 2006e	
	Volatilization rate	1996	0.2 g / g	IPCC, 2006e	
	Volatilization rate	1997	0.2 g / g	IPCC, 2006e	
	Volatilization rate	1998	0.2 g / g	IPCC, 2006e	
				Dogo 40 of 56	

iables Used in the Emissions Estimati	on Equations	Values last updated	on Wednesday, March 30, 2016
Volatilization rate	1999	0.2 g / g	IPCC, 2006e
Volatilization rate	2000	0.2 g / g	IPCC, 2006e
Volatilization rate	2001	0.2 g / g	IPCC, 2006e
Volatilization rate	2002	0.2 g / g	IPCC, 2006e
Volatilization rate	2003	0.2 g / g	IPCC, 2006e
Volatilization rate	2004	0.2 g / g	IPCC, 2006e
Volatilization rate	2005	0.2 g / g	IPCC, 2006e
Volatilization rate	2006	0.2 g / g	IPCC, 2006e
Volatilization rate	2007	0.2 g / g	IPCC, 2006e
Volatilization rate	2008	0.2 g / g 0.2 g / g	IPCC, 2006e
Volatilization rate	2009	0.2 g / g 0.2 g / g	IPCC, 2006e
Volatilization rate	2010		
		0.2 g / g	IPCC, 2006e
Volatilization rate	2011	0.2 g / g	IPCC, 2006e
Volatilization rate	2012	0.2 g / g	IPCC, 2006e
Volatilization rate	2013	0.2 g / g	IPCC, 2006e
Volatilization rate	2014	0.2 g / g	IPCC, 2006e
Activity = Nitrogen in unmanaged manure - S		Value and Unite	Deference
- Variable Name -	- Year -	- Value and Units -	- Reference -
Nitrogen in unmanaged manure - Swine	1990	205.02 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	1991	228.75 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	1992	284.84 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	1993	268.77 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	1994	249.48 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	1995	226.15 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	1996	186.22 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	1997	178.19 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	1998	181.16 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	1999	185.65 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2000	163.57 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2001	130.47 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2002	200.42 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2003	177.77 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2004	178.8 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2005	166.67 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2006	156.52 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2007	165.55 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2008	83.63 Mg (tonnes)	Compilation, see text
		• , ,	·
Nitrogen in unmanaged manure - Swine	2009	116.25 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2010	109.85 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2011	116 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2012	114.16 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2013	105.38 Mg (tonnes)	Compilation, see text
Nitrogen in unmanaged manure - Swine	2014	116.95 Mg (tonnes)	Compilation, see text
Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1994	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1995	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1996	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1997	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1998	7.500E-03	IPCC, 2006e
	1999	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O			
Leached nitrogen emitted as N2O	2000	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2001	7.500E-03	IPCC, 2006e

es Used in the Emissions Estima	•	•	on Wednesday, March 30, 20
Leached nitrogen emitted as N2O	2002		IPCC, 2006e
Leached nitrogen emitted as N2O	2003	7.500E-03	·
Leached nitrogen emitted as N2O	2004	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2005	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2006	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2007	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2008	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2009	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2010	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2011	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2012	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2014	7.500E-03	IPCC, 2006e
			·
Leaching rate	1990	0.3	IPCC, 2006e
Leaching rate	1991	0.3	IPCC, 2006e
Leaching rate	1992	0.3	IPCC, 2006e
Leaching rate	1993	0.3	IPCC, 2006e
Leaching rate	1994	0.3	IPCC, 2006e
Leaching rate	1995	0.3	IPCC, 2006e
Leaching rate	1996	0.3	IPCC, 2006e
Leaching rate	1997	0.3	IPCC, 2006e
Leaching rate	1998	0.3	IPCC, 2006e
Leaching rate	1999	0.3	IPCC, 2006e
Leaching rate	2000	0.3	IPCC, 2006e
_eaching rate	2001	0.3	IPCC, 2006e
•			
Leaching rate	2002	0.3	IPCC, 2006e
_eaching rate	2003	0.3	IPCC, 2006e
Leaching rate	2004	0.3	IPCC, 2006e
Leaching rate	2005	0.3	IPCC, 2006e
Leaching rate	2006	0.3	IPCC, 2006e
Leaching rate	2007	0.3	IPCC, 2006e
Leaching rate	2008	0.3	IPCC, 2006e
Leaching rate	2009	0.3	IPCC, 2006e
Leaching rate	2010	0.3	IPCC, 2006e
Leaching rate	2011	0.3	IPCC, 2006e
Leaching rate	2012	0.3	IPCC, 2006e
Leaching rate	2013	0.3	IPCC, 2006e
Leaching rate	2014	0.3	IPCC, 2006e
Nitrogen emitted as N2O	1990	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1991	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1992	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1993	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1994	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1995	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1996	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1997	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1998	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1999	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2000	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2001	0.01 g / g	
•			
Nitrogen emitted as N2O	2003	0.01 g/g	
Nitrogen emitted as N2O	2004	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	2005	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2006	0.01 g/g	
Nitrogen emitted as N2O	2007	0.01 g/g	IPCC, 2006e

es Used in the Emissions Estimati	•	Values last updated on Wednesday, March 30, 2
Nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g / g IPCC, 2006e
	1991	
Redeposited nitrogen emitted as N2O		0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1992	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1993	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1994	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
· ·	2005	
Redeposited nitrogen emitted as N2O		0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2009	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g/g IPCC, 2006e
Volatilization rate	1990	0.2 g / g IPCC, 2006e
Volatilization rate	1991	0.2 g / g IPCC, 2006e
Volatilization rate Volatilization rate	1992	0.2 g / g IPCC, 2006e
Volatilization rate	1993	0.2 g / g IPCC, 2006e
Volatilization rate	1994	0.2 g / g IPCC, 2006e
Volatilization rate	1995	0.2 g / g IPCC, 2006e
Volatilization rate	1996	0.2 g / g IPCC, 2006e
Volatilization rate	1997	0.2 g / g IPCC, 2006e
Volatilization rate	1998	0.2 g / g IPCC, 2006e
Volatilization rate	1999	0.2 g / g IPCC, 2006e
Volatilization rate	2000	0.2 g / g IPCC, 2006e
Volatilization rate	2001	0.2 g / g IPCC, 2006e
Volatilization rate	2002	0.2 g / g IPCC, 2006e
Volatilization rate	2003	0.2 g / g IPCC, 2006e
Volatilization rate	2004	0.2 g / g IPCC, 2006e
Volatilization rate	2005	0.2 g / g IPCC, 2006e
Volatilization rate	2005	
		0.2 g / g IPCC, 2006e
Volatilization rate	2007	0.2 g / g IPCC, 2006e
Volatilization rate	2008	0.2 g / g IPCC, 2006e
Volatilization rate	2009	0.2 g / g IPCC, 2006e
Volatilization rate	2010	0.2 g / g IPCC, 2006e
Volatilization rate	2011	0.2 g / g IPCC, 2006e
Volatilization rate	2012	0.2 g / g IPCC, 2006e
Volatilization rate	2013	0.2 g / g IPCC, 2006e

Volatilization rate 2014 0.2 g / g $\,$ IPCC, 2006e

Activity = Residential use of nitrogen fertilizer on turf - Synthetic fertilizers

territy = residential use of malogen fertilizer on ta		, ici dinzero	
- Variable Name -	- Year -	- Value and Units -	- Reference -
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	1990	114,938 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	1991	117,366 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	1992	119,404 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	1993	120,663 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	1994	121,470 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	1995	122,195 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	1996	123,163 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	1997	125,050 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	1998	126,631 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	1999	128,772 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2000	131,015 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2001	132,988 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2002	134,628 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2003	136,364 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2004	137,766 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2005	138,663 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2006	139,670 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2007	140,848 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2008	142,018 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2009	142,870 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2010	143,867 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2011	145,277 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2012	146,667 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2013	148,088 ton	Compilation, see text
Residential use of nitrogen fertilizer on turf - Synthetic fertilizers	2014	149,518 ton	Compilation, see text
Leached nitrogen emitted as N2O	1990	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1991	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1992	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1993	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1994	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1995	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1996	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1997	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1998	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	1999		,
Leached nitrogen emitted as N2O	2000	7.500E-03	IPCC, 2006e

	ion Equations	Values last updated	
Leached nitrogen emitted as N2O	2001		IPCC, 2006e
Leached nitrogen emitted as N2O	2002	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2003	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2004	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2005	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2006	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2007	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2008	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2009	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2010	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2011		IPCC, 2006e
Leached nitrogen emitted as N2O	2012		IPCC, 2006e
Leached nitrogen emitted as N2O	2013	7.500E-03	IPCC, 2006e
Leached nitrogen emitted as N2O	2014	7.500E-03	IPCC, 2006e
Leaching rate	1990		IPCC, 2006e
Leaching rate	1990	0.3	IPCC, 2006e
•			•
Leaching rate	1992	0.3	IPCC, 2006e
Leaching rate	1993	0.3	IPCC, 2006e
Leaching rate	1994	0.3	IPCC, 2006e
Leaching rate	1995	0.3	IPCC, 2006e
Leaching rate	1996	0.3	IPCC, 2006e
Leaching rate	1997	0.3	IPCC, 2006e
Leaching rate	1998	0.3	IPCC, 2006e
Leaching rate	1999	0.3	IPCC, 2006e
Leaching rate	2000	0.3	IPCC, 2006e
Leaching rate	2001	0.3	IPCC, 2006e
Leaching rate	2002	0.3	IPCC, 2006e
Leaching rate	2003	0.3	IPCC, 2006e
Leaching rate	2004	0.3	IPCC, 2006e
Leaching rate	2005	0.3	IPCC, 2006e
Leaching rate	2006	0.3	IPCC, 2006e
Leaching rate	2007	0.3	IPCC, 2006e
Leaching rate	2008	0.3	IPCC, 2006e
Leaching rate	2009	0.3	IPCC, 2006e
Leaching rate	2010	0.3	IPCC, 2006e
•	2010		
Leaching rate		0.3	IPCC, 2006e
Leaching rate	2012	0.3	IPCC, 2006e
Leaching rate	2013	0.3	IPCC, 2006e
Leaching rate	2014	0.3	IPCC, 2006e
Nitrogen emitted as N2O	1990	0.01 g/g	IPCC, 2006e
Nitrogen emitted as N2O	1991	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1992	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1993	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1994	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1995	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1996	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1997	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1998	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	1999	0.01 g / g	IPCC, 2006e
Nitrogen emitted as N2O	2000		IPCC, 2006e
Nitrogen emitted as N2O	2001		IPCC, 2006e
•	2002		IPCC, 2006e
Nitrogen emitted as N2O	-		
Nitrogen emitted as N2O Nitrogen emitted as N2O	2003	0.01 a / a	IPCC, 2006e
Nitrogen emitted as N2O	2003 2004		IPCC, 2006e
•	2003 2004 2005	0.01 g/g	IPCC, 2006e IPCC, 2006e IPCC, 2006e

es Used in the Emissions Estimati	•	Values last updated on Wednesday, March 30, 2
Nitrogen emitted as N2O	2007	0.01 g/g IPCC, 2006e
Nitrogen emitted as N2O	2008	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2009	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2012	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2013	0.01 g / g IPCC, 2006e
Nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1990	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1991	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1992	0.01 g/g IPCC, 2006e
, •	1993	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O		
Redeposited nitrogen emitted as N2O	1994	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1995	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1996	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1997	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1998	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	1999	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2000	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2001	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2002	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2003	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2004	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2005	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2006	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2007	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2008	0.01 g/g IPCC, 2006e
,	2009	
Redeposited nitrogen emitted as N2O	2010	0.01 g / g IPCC, 2006e 0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O		
Redeposited nitrogen emitted as N2O	2011	0.01 g / g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2012	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2013	0.01 g/g IPCC, 2006e
Redeposited nitrogen emitted as N2O	2014	0.01 g / g IPCC, 2006e
Volatilization rate	1990	0.1 g / g IPCC, 2006e
Volatilization rate	1991	0.1 g / g IPCC, 2006e
Volatilization rate	1992	0.1 g / g IPCC, 2006e
Volatilization rate	1993	0.1 g / g IPCC, 2006e
Volatilization rate	1994	0.1 g / g IPCC, 2006e
Volatilization rate	1995	0.1 g / g IPCC, 2006e
Volatilization rate	1996	0.1 g / g IPCC, 2006e
Volatilization rate	1997	0.1 g / g IPCC, 2006e
Volatilization rate	1998	0.1 g / g IPCC, 2006e
Volatilization rate	1999	0.1 g / g IPCC, 2006e
Volatilization rate	2000	0.1 g / g IPCC, 2006e
Volatilization rate	2001	0.1 g / g IPCC, 2006e
Volatilization rate	2002	
Volatilization rate	2003	0.1 g / g IPCC, 2006e
Volatilization rate	2004	0.1 g / g IPCC, 2006e
Volatilization rate	2005	0.1 g / g IPCC, 2006e
Volatilization rate	2006	0.1 g / g IPCC, 2006e
Volatilization rate	2007	0.1 g / g IPCC, 2006e
Volatilization rate	2008	0.1 g / g IPCC, 2006e
Volatilization rate	2009	0.1 g / g IPCC, 2006e
Volatilization rate	2010	0.1 g / g IPCC, 2006e
Volatilization rate	2011	0.1 g / g IPCC, 2006e
Volatilization rate	2012	0.1 g / g IPCC, 2006e

Variables Used in the Emissions Est	imation Equations	Values last updated on Wednesday, March 30, 2016
Volatilization rate	2013	0.1 g / g IPCC, 2006e
Volatilization rate	2014	0.1 g / g IPCC, 2006e